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Final
Environmental Assessment

Road Hollow
Gas Plant Project

July 1983

Department of the Interior
Bureau of Land Management
Kemmerer Resource Area
Kemmerer, Wyoming

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United States Department of the Interior

BUREAU OF LAND MANAGEMENT

District Office
P.O. Box 1869
Rock Springs, Wyoming 82902-1869

Dear Reader:

Enclosed is Volume II of the final environmental assessment on the Road Hollow Gas Plant. Volume I was distributed in April 1983 as the draft environmental assessment. The comments received on Volume I did not require major changes in the data, analysis, or conclusions; consequently the volume has not been reprinted. A limited number of copies are available upon request from the Kemmerer Resource Area Manager, Bureau of Land Management, P.O. Box 632, Kemmerer, Wyoming 83101.

This final EA addresses a variation in one of the alternatives, the analysis of the use of existing facilities. This alternative has been expanded to include the possibility of transporting the untreated gas from the Road Hollow Unit wells, by pipeline, to either Whitney Canyon or Carter Creek for processing. Under this alternative, the Road Hollow Gas Plant would not be constructed for at least two years.

Enclosed with this final EA is a copy of BLM's decision record. The decision record documents BLM's decision to select the existing facilities alternative.

Written comments on Volume II of this project will be accepted up to September 9, 1983. Comments on the document and decision record should be sent to the Kemmerer Resource Area Manager, Bureau of Land Management, P.O. Box 632, Kemmerer, Wyoming 83101.

Sincerely yours,

Rock Springs District Manager

Enclosure

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EA #WY-042-EA83-40
Case #W81040

DECISION RECORD

I. Title of Proposal - Road Hollow Gas Plant Project in the Kemmerer Resource Area, Rock Springs District, Wyoming

The proposed action and alternatives are in conformance with the land management decisions in the Pioneer Trails Management Framework Plan.

II. Alternatives Considered:

A. Alternative 1 - Proposed Action - Exxon Company, USA plans to construct a gas treatment plant and related facilities in order to treat sour gas and produce pipeline-quality gas and natural gas liquids. The related facilities included under the proposed action are as follows:

1. Plant site (see Map 1-3 of the draft document).

2. Gas gathering system (see Map 1-3).

3. Condensate and natural gas liquids by pipeline to Ryckman Creek.

4. Water supply from water wells.

5. Electric power supply - 2.0 miles of new line would be constructed to tie into an existing line (see map 1-3 in the draft document).

6. Access and sulfur haul routes - the eastern access road would be constructed.

7. Sales gas pipeline - a 10-inch diameter pipeline along the Bear River Divide to Carter Creek.

B. Alternative 2 - No Action - Under this alternative no rights-of-way would be issued and neither the plant nor the related facilities would be constructed. No changes would occur in the existing management situation.

C. Alternative 3 - Use of Existing Gas Treatment Plant Facilities - This is an interim alternative where the gas treatment plant would not be constructed for at least two years. Existing processing facilities would be utilized until that time. The plant site components would be reevaluated prior to construction to insure that the assessment provided and the mitigation applied are still adequate. Additionally any of the interim pipeline components listed below that are not developed within two years following this decision, would also be reevaluated in the same manner as the plant site components.

This alternative contains the following components.

1. Interim Pipeline Components

    a. A central heater facility encompassing one acre.

    b. Well production and gathering pipelines (same as the proposed action).

    c. Twelve-inch sour gas, and condensate pipeline to Chevron's Carter Creek facility.

    d. One-inch sweet gas pipeline built into the same trench as the sour gas and condensate pipeline.

    e. Access to and from the Road Hollow Unit would be via the existing Bear River Divide Road, to the Dee Ranch Road and then to Highway 189.

2. Plant Site Component

    a. The processing plant would be built as described in the proposed action.

    b. Condensate and NGL pipelines to Ryckman Creek, via the line constructed in 1c above plus a five mile extension to coincide with #3 of the proposed action.

    c. Gathering lines would be the same as 1b above.

    d. Water supply from water wells described in the proposed action.

    e. Sales gas pipeline would be via a new pipeline to Carter Creek to coincide with #7 of the proposed action.

    f. Electric power - 2.0 miles of new line would be constructed to tie into an existing line to coincide with #5 of the proposed action (see Map 1-3 in the draft document).

    g. Access and sulfur haul route - via the existing Bear River Divide Road to the Dee Ranch Road to Highway 189. The sulfur haul would continue north along Highway 189 to the existing sulfur loadout facility.

D. Component Alternatives

1. Well Production Gathering Lines. Alternatives to the well field gathering system are shown on Map 1-3 of the draft document.

2. Sales Gas Line Alternatives.

    a. This would involve the construction of a 10-inch pipeline along the Bear River Divide to a tie-in near the Whitney Canyon plant. This route would be 10.4 miles longer than the proposed action.

    b. A sales gas line would be constructed north along the Bear River Divide to Northwest Pipeline Company's Kemmerer compressor station. This would follow the right-of-way for Northwest Pipeline Company's proposed Trunk A gas pipeline.

    c. If Northwest Pipeline Company's Trunk A is constructed prior to completion of the Road Hollow plant, this pipeline could be utilized to transport the treated gas.

3. Condensate and NGL transport pipelines under this alternative would be extended 12.8 miles south along the MAPCO right-of-way to an existing pipeline at Divide Junction.

4. Hydrogen Sulfide Processing/Disposal Alternatives and Access Alternatives.

    a. The sulfur product would be transported by truck south along the Bear River Divide road to one of the following locations. Alternatives for access to the plant would be the same.

        1. The sulfur would be placed in Chevron's sulfur pipeline at the existing Carter Creek plant and transported to the existing loadout facility. Access would be the main roads to Carter Creek.

        2. If an unknown buyer should purchase the sulfur, the trucks would transport the product along existing roads to that location.

        3. If no immediate buyer is found, sulfur would be stored in brick form at plant site.

    b. Ammonium Thiosulfate Process - This process would be utilized to produce a salable fertilizer for highly alkaline soils. Ammonia would be trucked into the plant site, for this process, at a rate of one truck every four days per 40 million scfd processing module. The end product would be trucked daily from the plant along one of the routes described above.

5. Electrical Supply Alternative - A 138 kv line would extend from the existing substation at the Carter Creek facility to the plant site.

III. Decision/Rationale

Decision - The decision is to accept Alternative 3, the use of existing facilities, as analyzed in the final EA. This decision may be amended if an agreement with Amoco or Chevron cannot be reached. Currently, however, this alternative has fewer environmental impacts, and thus it is the preferred alternative.

Rationale - The installation of pipelines to transport the untreated sour gas to the existing Chevron facility would cause the least environmental impact. However, the current changing economic situation and no guarantee of a long-term processing agreement with Chevron or Amoco may lead Exxon to construct the new plant. Although the impacts would be somewhat greater than just the interim pipeline systems, these impacts would not be excessive or significant. Existing access and pipeline routes would be utilized as transportation agents. The plant site would disturb a small amount of acreage and the socioeconomic impacts would be minimal.

For this reason Alternative 3 is the best representation of decisions needed to implement the project yet restrict environmental impacts.

IV. Mitigation - The applicant's committed mitigation in the EA, BLM's standard stipulations, and the operating plan are accepted as a part of this decision.

V. Monitoring - Monitoring will be conducted as stated in the Environmental Assessment and the operating plan.

VI. Conclusion - Based on the analysis presented in Volumes I and II (Draft and Final) of the Road Hollow Gas Plant Project Environmental Assessment, I find that the action under the alternative selected will not have a significant impact on the human environment, and therefore conclude that no environmental impact statement is necessary.

Area Manager　　　　　　　　　　Date

I concur

District Manager　　　　　　　　　　Date

DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FINAL
ENVIRONMENTAL ASSESSMENT
WY-042-EA83-40

ROAD HOLLOW GAS PLANT PROJECT IN LINCOLN AND UNITA COUNTIES, WYOMING

Prepared by

BUREAU OF LAND MANAGEMENT (LEAD AGENCY)
AND WOODWARD-CLYDE CONSULTANTS

July 1983

COVER SHEET

EXXON COMPANY U.S.A.
ROAD HOLLOW GAS PLANT PROJECT
FINAL ENVIRONMENTAL ASSESSMENT

( ) Draft (x) Final

Lead Agency

U.S. Department of the Interior, Bureau of Land Management

Abstract

The applicant proposes to construct and operate a natural gas processing plant, transport, and support facilities in southwestern Wyoming, approximately 20 air miles southwest of Kemmerer/Diamondville and 30 miles northeast of Evanston. All major components of the proposed project would be necessary to recover and convert sour (containing hydrogen sulfide) well gas to a marketable product. Alternatives assessed include interim gas processing at existing facilities, alternative routes for transportation of marketable products, technological alternatives for removal of hydrogen sulfide from well gas, various waste disposal and water supply alternatives and the no-action alternative.

This EA assesses the potential impacts that would be associated with the proposed project.

EA Contact

Questions and comments on this EA should be directed to:

Kemmerer Resource Area Manager
Bureau of Land Management
Kemmerer Resource Area Office
P.O. Box 632
Kemmerer, Wyoming 83101

Phone: Commercial (307) 877-3983

TABLE OF CONTENTS

Page

SUMMARY 1

CHANGES TO THE TEXT 5

INTERIM GAS PROCESSING ALTERNATIVE 6
OTHER CHANGES TO THE TEXT 27

MITIGATING MEASURES 51

MONITORING 53

CONSULTATION AND COORDINATION 57

TEAM ORGANIZATION 57

COORDINATION IN PREPARATION OF THE PROPOSED ACTION 57

PUBLIC CONSULTATION AND COORDINATION 57

PUBLIC PARTICIPATION 62

REVIEW OF THE DRAFT ENVIRONMENTAL ASSESSMENT 63

RESPONSES TO COMMENTS 63

LITERATURE CITED 89

DETAILED LOCATION MAP FOR PROPOSED AND ALTERNATIVE PROJECT COMPONENTS 91

Exxon Company, U.S.A. (Exxon), proposes the construction and operation of a natural gas processing plant, transport, and support facilities. These facilities would produce and deliver approximately 22 billion cubic feet per year of pipeline-quality natural gas over a 20-year period. All major components of the proposed project would be necessary to recover and convert sour (containing hydrogen sulfide) well gas to a marketable product. The gas reserves that would be developed are located in southwestern Wyoming, approximately 20 air miles southwest of Kemmerer/Diamondville and 30 miles northeast of Evanston.

The Road Hollow project as proposed by Exxon would include construction of: approximately 11 miles of well gas gathering pipelines, one two-module centralized gas treatment plant, approximately 8 miles of sales gas pipeline, approximately 42 miles of other product (liquid hydrocarbons) pipelines, approximately 23 miles of an access and sulfur haul road, and approximately 2 miles of 138-kilovolt (kV) electric power line. These facilities would be built in order to process well gas containing hydrogen sulfide and to produce marketable natural gas, marketable liquid hydrocarbons, and elemental sulfur. The natural gas and liquid hydrocarbons would be delivered and sold to pipeline companies for shipment to markets, while elemental sulfur would be transported by truck.

During construction of the proposed project components, approximately 917 acres of public, state, and private lands would be disturbed. It is estimated that 314 acres of public and private land would be occupied by these facilities during the project life of the proposed gas treatment plant. The entire proposed plant site, and portions of other proposed project facilities, would be located on public lands managed by the Bureau of Land Management (BLM), Kemmerer Resource Area. A Rights-of-Way (ROW) Application for the plant site and other related facilities involving public lands has been submitted by Exxon to the BLM Kemmerer Resource Area office.

The BLM Kemmerer Area office is responsible for preparation of this Environmental Assessment (EA) in accordance with provisions of the National Environmental Policy Act (NEPA) and regulations of the Council on Environmental Quality (CEQ). The purpose of the EA is to address potential impacts that would result from the applicant's proposed action and other alternatives identified. A public scoping meeting was held for the purpose of identifying issues and concerns for the EA.

Alternatives to the proposed action that were identified for the Draft Environmental Assessment (DEA) consisted mainly of other routes for transportation of marketable products. Alternatives other than route alternatives included a different technology for removing hydrogen sulfide from well gas and use of surface water from Woodruff Narrows rather than ground water from proposed wells. The no action alternative was defined as the proposed gas treatment plant and ancillary facilities not being constructed.

After the DEA was prepared in March 1983, Exxon asked the BLM to analyze an interim method of gas processing that would make use of existing facilities. This variation of an alternative that was discussed in the DEA would involve: 1) delaying construction and operation of Exxon's proposed Road Hollow gas processing plant for 2 years or longer; 2) construction of a sour gas well production gathering system; 3) construction of a central heater and separation facility; and 4) construction of a 12-inch-diameter pipeline and ancillary facilities for transport of sour gas and condensate (full well stream) to an existing gas processing facility in Uinta County, Wyoming. Exxon has submitted a right-of-way (ROW) grant application to the BLM for the sour gas ROW and related facilities.

Evaluation of potential impacts was based on the description of the proposed action and alternatives, including implementation of impact-reducing procedures for construction, operation, maintenance, and abandonment and special applicant-committed practices to further reduce impacts for specific resource considerations. Inclusion of these applicant-proposed practices, in part, accounts for the low number, magnitude, and duration of environmental impacts associated with this proposed project.

Impacts were identified and assessed based on indicators of significance defined for each resource topic. This EA focuses on those impacts with the most potential for approaching these indicators of significance. Other less important impacts were identified but were given less emphasis. Technical reports were prepared for two resource topics (wildlife and socioeconomics) for which the largest number and magnitude of impacts were expected. The major findings of the impact analysis for those resources considered sensitive to project activities are given below.

AIR QUALITY

Operation of the proposed plant facilities would not cause violation of any applicable air quality standards and would be too low to result in any appreciable cumulative impacts when combined with emissions from other nearby gas processing plants. Annual SO2 concentrations in g/m3 would be less than 0.05 at distances greater than 8 miles from the proposed plant site.

GEOLOGY

The recurrence interval for a maximum magnitude (Ms) 6-1/2 to 7 earthquake in the area of influence is on the order of several hundred to two thousand years. An earthquake of this magnitude could damage proposed or alternative facilities.

PALEONTOLOGY

The potential for impacts to significant fossils within highly sensitive geologic units is small, given the implementation of the management plan committed to by the applicant.

WATER RESOURCES

No significant water resource impacts would result from the proposed action or alternatives. Annual average water supply requirements of 32 acre-feet (20 gallons per minute) would not be expected to significantly impact ground-water or surface-water supplies in the region.

VEGETATION

The area of each vegetation type that would be disturbed by proposed or alternative project components compared with the total area of the type in the geographic area of influence would be low (maximum 1.6 percent). The proposed access and sulfur haul road would result in the largest number of acres disturbed.

WILDLIFE

Clearing of areas for construction of proposed or alternative project components would not result in significant losses of important wildlife habitat. Human presence and activity would not significantly disturb crucial wildlife use areas due to stipulation of construction avoidance dates and other provisions in the standard BLM Wyoming ROW grant stipulations. No significant cumulative impacts would result from important wildlife habitat loss. Cumulative disturbances resulting from increased human presence--e.g., road kills, poaching, overcrowding of displaced animals--may result, but cannot be quantified. No threatened or endangered species would be adversely affected.

LIVESTOCK AND RANGE

Construction of the proposed action would result in short-term loss of about 100 animal unit months (AUM), compared to 66,000 AUMs available within the regional grazing allotment. Long-term loss of AUMs would be minimal. If the proposed access and haul road is not constructed, short-term and long-term loss of AUMs would decrease substantially. The Road Hollow project would increase the long-term cumulative loss of AUMs from 2.01 percent of AUMs available in the Cumberland/Uinta allotment to 2.06 percent.

CULTURAL RESOURCES

No known cultural resources (including variants of the Oregon Trail) should be adversely affected by the proposed action or alternatives, assuming the implementation of procedures and methods to be specified in the cultural resources management plan and implementation of the applicant-committed practices.

VISUAL RESOURCES

Visual contrasts in color, texture, and line would result from road and pipeline construction where proposed or alternative ROWs cross corridors identified as the Oregon Trail. These contrasts would be sensitive in locations where trail ruts are clearly visible and interpretive markers have been placed for public reference--e.g., along portions of the proposed eastern access and sulfur haul road. Visual impacts would not be significant because of stipulated reclamation requirements and other applicant-committed mitigative measures.

SOCIOECONOMICS

The proposed project and associated construction work force would increase the population of affected communities, which in turn would increase demands on public services (including school districts) and demand on temporary and permanent housing. These impacts would not be significant, based on applicant-committed practices, including development of a housing plan and monitoring of and assistance to social service agencies and affected school districts.

CHANGES TO THE TEXT

Subsequent to the preparation of the DEA, the applicant requested analysis for a variation of the gas treatment alternative that would make use of existing gas treatment facilities. The analysis of this variation is described below and is followed by text changes that have resulted from public comment, other agency review, and internal review.

VARIATION OF THE GAS TREATMENT ALTERNATIVE USING EXISTING FACILITIES

CHAPTER 1 - DESCRIPTION OF ALTERNATIVES, INCLUDING THE PROPOSED ACTION

ALTERNATIVES

Interim Gas Processing Alternative

Background. After the Draft Environmental Assessment (DEA) on the Road Hollow Gas Plant Project (WY-042-EA83-40) was prepared in March 1983, Exxon asked the BLM to analyze a variation of the gas treatment alternative that would make use of existing facilities. This variation, i.e., the interim gas processing alternative, would involve: 1) delaying construction and operation of Exxon's proposed Road Hollow gas processing plant for 2 years or longer; 2) construction of a sour gas well production gathering system; 3) construction of a central heater and separation facility; and 4) construction of a 12-inch-diameter pipeline and ancillary facilities for transport of sour gas and condensate (full well stream) to an existing gas processing facility in Uinta County, Wyoming.

Exxon has submitted a right-of-way (ROW) grant application to the Bureau of Land Management (BLM), Kemmerer Resource Area Office (Application Number W-81040, filed April 4, 1983) for a new sour gas pipeline ROW and related facilities.

The purpose of this analysis is to address the potential environmental impacts associated with Exxon's interim gas processing alternative.

Purpose and Need. The purpose of Exxon's interim gas processing alternative is to develop and transport (on an interim basis) approximately 40 million standard cubic feet per day (MMSCFD) of sour natural gas and 2400 barrels per day (BPD) of condensate to an existing gas processing plant in Uinta County, Wyoming.

All major components of the interim alternative, including the producing wells, gas gathering system, central heater and separation facility, and sour gas and condensate transport pipeline, are necessary to develop and transport the sour natural gas and condensate to an existing gas processing plant.

Proposed Interim Gas Processing Alternative. The proposed interim gas processing alternative would include: sour gas and condensate collection at the wellheads and transport via gathering pipelines; one central heater and separation facility to collect and heat sour natural gas and condensate; one sour gas/condensate pipeline to Chevron's gas gathering pipeline tie-in; one sweet fuel gas pipeline; and related facilities. (Refer to Map G-1, which was revised to show this alternative.)

The proposed interim gas processing alternative components would be located on public and private land. Table 1-1 lists the proposed facilities, status of the lands involved, and the area which would be involved during construction and operation of project facilities.

Project Components.

Central Heater and Separation Facility. One central heater and separation facility to collect sour natural gas and condensate from the wellheads via the gas gathering system is proposed. This proposed facility would include a heater that would initially burn sour gas (6 million Btu/hour) and test and production separators.

Table 1-1. LAND STATUS AND CONSTRUCTION/OPERATIONAL ACREAGES FOR ALTERNATIVES INCLUDING THE PROPOSED ACTION

County	Construction Right-of-Way		Construction Right-of-Way Acreage				Estimated Acreage Disturbed During Construction[a,b]	Estimated Total Acres Occupied by Facilities	Percent Paralleling Existing Utility Rights-of-Way[a]
	Width in Feet	Length in Miles	BLM	State	Private	Total			
PROPOSED INTERIM GAS PROCESSING ALTERNATIVE									
Central Heater and Separation Facility									
Lincoln	NA	NA	1	0	0	1	1	1	NA
Gas Gathering Pipelines									
Lincoln	50	4.9	30	0	0	30	25	0	0
Sour Gas/Condensate and Sweet Fuel Gas Pipelines to Chevron Pipelines Tie-in									
Lincoln	50	5.0	28	0	2	30	16	0	80
INTERIM GAS PROCESSING COMPONENT ALTERNATIVES									
Gas Gathering Pipelines[c]									
Lincoln	50	7.0	42	0	0	42	30	0	45
Sour Gas/Condensate and Sweet Fuel Gas Pipelines to Amoco Heater Tie-in									
Lincoln	50	6.9	42	0	1	43	22	0	78
Uinta	50	0.8	5	0	0	5	2	0	0
	100	2.6	29	0	3	32	16	0	100
Total		10.3	76	0	4	80	40	0	77
Intermediate Heater for Sour Gas/Condensate Pipeline to Amoco Heater Tie-in									
Lincoln	NA	NA	1	0	0	1	1	1	NA

Note: Acreage numbers were generally rounded to the nearest whole number.

NA = Not Applicable.

[a] Assumes NW - Bear River Divide Trunk A Pipeline would be constructed prior to construction of the interim gas processing alternative.

[b] Only includes new disturbance (i.e., acreage does not include workspace overlap with other recently constructed utility rights-of-way).

[c] Only three alternative gas gathering pipelines were identified for analysis (i.e., numbers should not be compared against proposed alternative).

The 1-acre central heater and separation facility would be entirely on public lands on a plateau (less than 5 percent slope) of the Bear River Divide at approximately 7900 feet elevation. The proposed location for the central heater and separation facility is in Section 5, T19N, R119W (Map G-1). At a minimum, the facility would be designed to handle at least 40 MMSCFD of sour gas and 2400 BPD of condensate.

The site would be graded, cleared, and surfaced with gravel in order to provide a level construction area and to control surface runoff. Gravel sources are located near Sage, Kemmerer/Diamondville, and Woodruff, Utah.

The construction period for the interim gas processing alternative is August through October of 1983. A work force of about 25 people would be required over this 3-month period to construct the gas gathering system, central heater and separation facility, sour gas and condensate pipeline, and sweet fuel gas pipeline. One contract employee (pumper) would be required (on a daily basis) for normal operation and maintenance activities. The central heater and separation facility would be designed to operate 24 hours a day, 7 days per week.

Other than heater air emissions, no wastes (except construction debris) would be generated. Produced water, etc. would be separated at Chevron's Carter Creek facility. Similarly, any other waste products resulting from gas processing at the Chevron facility would be discharged under existing plant permits.

Safe handling of H_2S (i.e., sour gas) would be emphasized during operation of the central heater and separation facility. Safety features would be incorporated into the design of the facility, including automatic and remotely operated shutoff valves located at the wellhead and wind socks. In addition, protective equipment for personnel would be kept at each site and in vehicles for use in case of an accidental release of H_2S.

Well Production Gathering Pipelines. An estimated 4.9 miles of underground 6-inch-diameter gathering lines would be required to transport gas to the central heater and separation facility from the four wells currently planned for production (refer to Map 1-3 in the DEA for the locations of the gas gathering lines to wells 4, 7, 8, and 10.) If more than four wells are brought into production, construction of additional gathering lines would be required. The actual mileage of any additional gathering lines would be dependent upon future well locations.

Wellhead heaters would be installed at each well, and the heaters would initialy burn sour gas. A diaphragm operated choke would be installed in each wellhead heater to control pressure downstream of the heater. At each wellhead a high-low pressure emergency shutdown valve would be installed as the wing valve. High-low pressure pilots would sense the pressure downstream of the choke in the heater and shut-in the well if either variant pressure condition occurs. A low pressure pilot installed upstream of the choke would shut-in the well should a line rupture occur. The chokes would maintain pressure at appropriate levels based on demand.

A 50-foot ROW would be needed for construction of each gathering line to provide working space on one side of the trench and an area to store excavated material on the other side. For wells located in the same general area within the well field, gathering lines to the central heater facility would be laid in ROWs adjacent to each other in order to minimize surface disturbance while allowing for metering production of each well.

Gathering lines would be hydrostatically tested. Wastewater would be tested and, if acceptable, would be discharged to a temporary evaporation pond at the central heater and separation facility.

Sour Gas/Condensate Pipeline. After metering the sour gas and sour condensate at the separation facility, the products would be combined and transported together approximately 5.0 miles in an underground 12-inch diameter pipeline south along the Bear River Divide to the Chevron gas gathering pipeline tie-in (Map G-1). The construction ROW would be 50 feet wide.

Once the sour gas and condensate were processed at the Chevron facility, the products would be delivered to existing transportation systems in the immediate vicinity.

The sour gas and condensate would be transported from the tie-in point to Chevron's Carter Creek gas processing plant via Chevron's existing gas gathering pipeline.

Sweet Fuel Gas Pipeline. Approximately 5.0 miles of underground 4-inch diameter pipeline would be constructed for potential transportation of sweet (i.e., processed to remove H_2S) fuel gas from the Chevron sweet fuel gas pipeline tie-in point north along the Bear River Divide to Exxon's proposed central heater and separation facility (Map G-1). Sweet gas would potentially be used to meet energy requirements (e.g., heaters) for the central heater and separation facility and gas gathering system (i.e., wellhead heaters). The air quality permit (Department of Environmental Quality [DEQ]) Exxon needs to burn sour gas would expire after 2 years, thus the sweet fuel gas pipeline would allow Exxon to switch to sweet gas before the permit expired. The sweet fuel gas pipeline would be laid in the same ROW and trench with the aforementioned sour gas and condensate pipeline, thus no additional surface disturbance would be required.

Water Supply. Water requirements for construction of the central heater and separation facility, including water for dust control, hydrostatic testing of pipelines, and compaction of fills, would be approximately 0.9-acre feet (281,400 gallons). Water would be obtained from an existing water well in Section 10, T19N, R119W and/or trucked from Kemmerer. No water would be required during the operational phase of the interim gas processing project.

Electric Power Supply. No electrical supply system would be necessary for construction or operation of the interim gas processing project.

Access. Access to the proposed central heater facility during construction and operaton of the proposed interim Road Hollow project would be along the existing Whitney Canyon Road/Bear River Divide Road and/or along the existing Amoco sulfur haul road/Bear River Divide Road (refer to Map 1-1 in the DEA). Construction and operation of the proposed interim gas processing alternative would require no new access roads.

Interim Gas Processing Component Alternatives. Brief descriptions of reasonable component alternatives to the proposed interim gas processing alternative are presented below. Only those aspects of the component alternatives that are different from the proposed interim gas processing alternative are discussed.

Central Heater and Separation Facility Site Alternatives. Alternative sites for the central heater and separation facility within the general vicinity of the well field were considered during site reconnaissance. No alternative sites were identified as having environmental advantages over the proposed site. The reconnaissance considered factors such as proximity to the Road Hollow gas field, favorable topography for plant construction and air dispersion characteristics, and proximity of existing access.

Well Production Gathering Pipelines. Alternatives to three of the four proposed interim gas processing alternative gathering lines (to wells 4, 7, 8, and 10) were selected for further analysis in an effort to reduce surface disturbance. Alternative routes to wells 7, 8, and 10 total 7.0 miles of buried 6-inch-diameter gathering lines (refer to Map 1-3 in the DEA). Rights-of-way required, total acres disturbed by construction and operation, and the status of lands involved are given in Table 1-1.

Sour Gas/Condensate Pipeline. If use of Chevron's Carter Creek gas treatment plant for processing purposes can not be negotiated, it may be necessary to transport the sour gas and condensate about 5 miles farther to an existing heater/potential tie-in point on the Amoco gas gathering line system (Map G-1). This component alternative would require about 10.3 miles of underground 12-inch-diameter pipeline. The pipeline would transport sour gas and condensate south along the Bear River Divide (milepost [MP] 0.0-7.0) and then along and parallel to Chevron's existing water supply pipeline (MP 7.7-10.3); terminating at an existing Amoco sour gas gathering line heater (Map G-1). The sour gas and condensate would then be transported to Amoco's Whitney Canyon gas treatment plant via an existing Amoco gas gathering line. The pipeline construction ROW would be 50 feet wide between MP 0.0 and 7.7, and 100 feet wide between MP 7.7 and 10.3. A

100-foot-wide construction ROW would be required between MP 7.7 and 10.3 due to the steep terrain in this area.

This pipeline alternative would require construction of a 1-acre intermediate heater facility that would initially burn sour gas (6 million Btu/hour). The proposed location for this intermediate heater is in Section 30, T19N, R119W (Map G-1).

Once the sour gas and condensate were processed at the Amoco facility, the products would be delivered to existing transportation systems in the immediate vicinity.

Sweet Fuel Gas Pipeline. Under the Amoco alternative scenario, approximately 10.3 miles of underground 4-inch diameter pipeline would be constructed for potential transportation of sweet (i.e., processed to remove H_2S) fuel gas from an existing Amoco sweet gas line north to the proposed Exxon central heater and separation facility. The existing Amoco sweet gas line supplies fuel to the aforementioned Amoco sour gas gathering line heater (Map G-1). Sweet fuel gas would potentially be used to meet energy requirements (e.g., heaters) for Exxon's central heater and separation facility, intermediate heater facility, and gas gathering system (i.e., wellhead heaters). The sweet gas pipeline would be laid in the same ROW and trench with the aforementioned alternative sour gas and condensate pipeline, thus no additional surface disturbance would be required.

Construction, Operation, Maintenance, and Abandonment Procedures for Alternatives.

If the proposed interim gas processing alternative is selected, the applicant would undertake construction, operation, maintenance, and abandonment, using the same general practices and procedures as specified for the proposed action in the DEA. Minor differences in operational procedures are discussed below.

Operation and Maintenance Procedures.

Central Heater and Separation Facility. The automatic H_2S sensor detection system discussed in the DEA for the proposed Exxon gas treatment plant would not be used for the alternative central heater and separation facility. Instead, operations personnel would wear personal H_2S monitoring devices at all times.

Applicant-Committed Practices

The applicant would undertake a number of design, construction, and restoration practices that would be applicable to the proposed interim gas processing alternative. These practices are discussed in the Applicant-Committed Practices section for the proposed action in the DEA.

SUMMARY AND COMPARISON OF IMPACTS FOR ALTERNATIVES, INCLUDING THE PROPOSED ACTION

During the delay of construction for proposed gas processing facilities, impacts associated with the interim gas processing alternative would generally be similar to those impacts discussed in the DEA for that portion of the plant site that would be occupied by the heater and separator, proposed/alternative gas gathering lines, and proposed sales gas pipeline to Carter Creek. These project components generally correspond to the applicant's proposed gas processing interim alternative central heater and separation facility, proposed/alternative gas gathering system, and proposed sour gas/condensate and sweet fuel gas pipelines, respectively. The portion of the interim gas processing component alternative sour gas/condensate and sweet fuel gas pipelines ROW south of Chevron's Carter Creek facility is covered by the Supplemental Chevron Water Pipeline EA (BLM 1981) (supplements Final Environmental Assessment, Whitney Canyon and Carter Creek Natural Gas Processing Projects [BLM 1980]).

After a delay of 2 years or longer, the interim gas processing would be expanded to include the gas processing and related facilities proposed in the DEA. At this time, the overall magnitude of impacts for the interim gas processing alternative would increase and would be similar to the level of impacts discussed in the DEA. The increased level of impacts would result because, with minor exceptions, all components discussed in the DEA but not built for the interim processing would need to be constructed for implementation of the proposed action as described in the DEA. One exception is that the 5.0 mile sour gas/condensate pipeline constructed for the interim processing could be used as the first segment of the proposed condensate line to Amoco's Ryckman Creek facilities.

Although no significant impacts would be expected to result from construction and operation of Exxon's proposed interim gas processing alternative, minor differences can be discerned between the component alternatives. Construction of the sour gas/condensate and sweet fuel gas pipelines to the Chevron pipelines tie-in point would disturb about 24 acres less (16 acres versus 40 acres) vegetation and terrain than the alternative pipelines ROW to the Amoco heater tie-in. Reclamation of a portion of the alternative pipeline ROW (MP 7.7-10.3) to the Amoco heater tie-in would be difficult, since it traverses steep terrain (up to 30 percent slope). Additionally, the alternative sour gas/condensate pipeline to the Amoco heater tie-in would require an intermediate heater, thus SO_2 emissions would be slightly higher (additional 215 lbs/day) for this component alternative (refer to the Changes to the Text section for Chapter 3). Health and safety concerns associated with transportation of sour gas are also discussed in the Changes to the Text section for Chapter 3.

CHAPTER 2 - AFFECTED ENVIRONMENT

ALTERNATIVES

Proposed Interim Gas Processing Alternative

This section provides information on the affected environment for those resource topics which, based on a review of other recently completed environmental documents, would be potentially affected differently by Exxon's interim gas processing alternative than by the proposed action or alternatives assessed in the Road Hollow DEA.

Climate, Air Quality, and Noise. The baseline meteorology (climate), air quality, and noise conditions in the project region have been described in the Road Hollow DEA (BLM 1983). Briefly, the climate of the area is continental with relatively cool temperatures and small amounts of precipitation. Dispersion conditions in the area are relatively good because wind speeds typically exceed 10 miles per hour 60 percent or more of the time, on an average.

Existing air quality in the region is good. Available air quality monitoring data indicate that both national and state ambient air quality standards are attained. Occasionally, strong winds may lead to elevated levels of particulate matter. However, these levels are due to natural dust and not man-made sources.

At present, there are no noise measurements available for the project region. The EPA (1974) has found that similar rural sites have background levels of approximately 35 to 40 decibels, L_{dn} scale.

Other Resource Topics. The major facilities associated with Exxon's proposed interim gas processing alternative are: central heater and separation facility; proposed gas gathering system; and proposed sour gas/condensate and sweet fuel gas pipelines to the Chevron pipelines tie-in point. These components generally correspond to the gas plant site, proposed gas gathering system, and proposed sales gas pipeline to Carter Creek, respectively, assessed in the Road Hollow DEA. Refer to the Road Hollow DEA for applicable descriptions of the affected environment (and environmental impacts) for the following resources:

- Geology (including geologic hazards) and mineral resources
- Paleontological resources
- Soils (including prime and unique farmlands)
- Water resources
- Vegetation
- Wildlife (including threatened and endangered species)
- Aquatic Resources
- Livestock and range
- Cultural resources
- Visual resources
- Recreation and wilderness resources
- Transportation
- Socioeconomic conditions

In addition to the resource topics listed above, several other items were considered in the Road Hollow Gas Plant Project DEA. None of these items occur in the geographic area of influence for the DEA or this supplement, therefore no further analysis of impacts was conducted.

- Wetlands
- 100-year floodplains
- Prime or unique farmlands
- Wilderness values, including wilderness study area
- Areas of Critical Environmental Concern (ACECs)

- Prime or sole source of drinking water
- Wild or scenic rivers

Several other recently completed environmental documents address the general area that would be affected by Exxon's proposed interim gas processing alternative. For a list of these other documents, refer to the Relationship to Other Documents section in Chapter 1 of the Road Hollow DEA (BLM 1983).

Interim Gas Processing Component Alternatives

Climate, Air Quality, and Noise. Affected environment conditions are the same as described above (under Proposed Interim Gas Processing Alternative) and in Chapter 2 of the Road Hollow DEA.

Other Resource Topics.

Alternative Gas Gathering System. The affected environment discussions for the alternative gas gathering system in the Road Hollow DEA apply to the alternative gas gathering system for Exxon's interim gas processing alternative. Refer to the aforementioned DEA (BLM 1983) for the applicable descriptions (alternative gas gathering pipelines for wells 7, 8, and 10) of the affected environment for the resource topics listed above.

Alternative Sour Gas/Condensate and Sweet Fuel Gas Pipelines. The affected environment for the portion of the interim alternative sour gas/condensate and sweet fuel gas pipelines ROW north of Chevron's Carter Creek facility (Map G-1) is presented in the Road Hollow DEA (BLM 1983). Refer to the resource discussions for the proposed sales gas pipeline to Carter Creek in Chapter 2 of the aforementioned DEA.

The Supplemental Chevron Water Pipeline EA (BLM 1981) includes a description of the affected environment for the portion of Exxon's interim alternative sour gas/condensate and sweet fuel gas pipelines between Chevron's Carter Creek facility and the Amoco heater tie-in point.

CHAPTER 3 - AFFECTED ENVIRONMENT

ALTERNATIVES

Interim Gas Processing Alternative

This section provides impact assessments for those resource topics which, based on a review of other recently completed environmental documents, would be potentially impacted differently by Exxon's proposed interim gas processing alternative than by the projects assessed in the other environmental documents.

Climate, Air Quality, and Noise.

Construction. The primary source of air pollution would be fugitive dust emissions from earthwork and exhaust from construction equipment. Uncontrolled fugitive dust emissions from construction are estimated to be about 1.2 tons per acre per month (EPA 1979). Engine exhaust would be a minor source because of the short construction period and small amount of equipment to be used. Construction activities would also cause a temporary increase in ambient noise levels. Heavy equipment and construction activities typically produce noise levels of approximately 90 decibels at a distance of fifty feet from the source (EPA 1974). These levels would rapidly attenuate with distance and would cease upon completion of construction.

The above air pollutant emissions and noise level increases would be temporary and spread over the project area. No significant impacts would be expected.

Operation. The only sources of air pollution during operation of the proposed interim gas processing alternative would be from the four well-field heaters and the central heater and separation facilities which would fire sour natural gas. The alternative sour gas/condensate pipeline to the Amoco heater tie-in would require an intermediate heater (i.e., additional emissions). Only emissions of sulfur dioxide (SO_2) would be large enough to examine with dispersion models. Because of complex terrain in the project region, the EPA VALLEY model was used to estimate the impact of these SO_2 emissions. Source data for the heaters is presented in Table 3-1. Meteorological data and predicted SO_2 concentrations are presented in Table 3-2. The maximum 24-hour average increase is predicted to be approximately 19.5 micrograms per cubic meter (central heater and separation facility). Based on these results, no violation of ambient standards would take place as a result of operation.

The heaters would also be minor sources of noise. This noise is expected to affect only the immediate vicinity of the source. No significant impact on ambient noise levels is expected.

Other Resource Topics. Potential resource impacts resulting from construction, operation, maintenance, and abandonment of Exxon's interim gas processing alternative are described earlier in the Road Hollow DEA and in other existing environmental documents; as discussed earlier tor the Chapter 2 - Affected Environment section. Construction and operational acreages associated with Exxon's interim gas processing alternative are presented in Table 1-1.

Based on a review of the project description, applicant-committed practices, and environmental documents covering the same general project area, no significant resource impacts would be expected to result from construction and operation of Exxon's proposed interim gas processing alternative. A summary and comparison of impacts for alternatives, including the proposed action is presented earlier in

Table 3-1. ROAD HOLLOW INTERIM GAS PROCESSING ALTERNATIVE WELLHEAD, CENTRAL HEATER AND SEPARATION FACILITY, AND PIPELINE HEATERS EMISSION DATA

Heater Location	Heater Duty (Btu/Hr.)	Stack Height (ft)	Stack Diam. (ft)	Stack Exit Temp (°F)	Stack Vel. (ft/sec)	SO_2 Emission[a] (lb/day)
Well No. 4[b]	3 million	36	2	900	10	107.5
Well No. 7[b]	3 million	36	2	900	10	107.5
Well No. 8[b]	3 million	36	2	900	10	107.5
Well No. 10[b]	3 million	36	2	900	10	107.5
Central Heater and Separation Facility[b]	1 unit @ 6 million	36	2	900	10	215.0
Intermediate Heater[c]	2 units @ 3 million	36	2	900	10	215.0

Note: These heaters were modeled to simulate worst-case combined impacts.

[a] Based on burning sour gas containing one mole % H_2S

$$\frac{(3\text{x}10^6\ \text{Btu/hr})}{(1130\ \text{Btu/ft}^3)} \ \text{X}\ \frac{(24\ \text{hr})}{(\ \text{day})} \ \text{X}\ \frac{(\text{lb-mole})}{(379\ \text{ft}^3)} \ \text{X}\ (1\ \text{mole}\ \%H_2S) \ \text{X}\ \frac{(64\ \text{lb}\ SO_2)}{(\text{lb - mole})} = 107.5\ \text{lb/day}$$

[b] Applies to proposed and alternative gas gathering systems for the interim gas processing alternative.

[c] Only applies to alternative sour gas/condensate pipeline to Amoco heater tie-in.

Table 3-2. METEOROLOGICAL INPUT AND MODEL RESULTS

Source Identification	Well No. 4[a]	Well No. 7[a]	Well No. 8[a]	Well No. 10[a]	Central Heater and Separation Facility[a]	Intermediate Heater[b]
Wind Data						
Wind Direction	East	East	ENE	ENE	ENE	SSE
Wind Speed (m/sec)	2.5	2.5	2.5	2.5	2.5	2.5
Stability Class	F	F	F	F	F	F
VALLEY OUTPUT						
Max. Receptor Concentration (24 hr. aver.) gm/m^3	6.7	8.1	13.1	6.7	19.5	7.5
Max. Receptor Location (km) (downwind from site)	0.7	1.0	0.65	1.1	0.7	1.2

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[a] Applies to proposed and alternative gas gathering systems for the interim gas processing alternative.

[b] Only applies to alternative sour gas/condensate pipeline to Amoco heater tie-in.

the Chapter 1 - Description of Alternatives, Including the Proposed Action section.

Health and Safety. The gas to be transported in the gas gathering and sour gas/condensate pipelines would contain approximately 0.5-0.6 percent (5000 ppm) hydrogen sulfide (H_2S) gas. The possible health effects of an accidental release of this gas are discussed below.

An accidental release, such as from a pipeline rupture, would trigger automatic safety systems to shut down operation and minimize any release. The assessment is based on the known health effects of H_2S, a worst-case dispersion modeling analysis of a release from a pipeline rupture, and a review of the likelihood of this type of accident.

The health effects of H_2S depend on both the amount and duration of exposure. Exposure to concentrations of greater than 700 parts per million (ppm) can result in death in a matter of minutes while exposure to levels of 450-500 ppm can be fatal in less than 30 minutes. Symptoms of lower grade exposures include eye irritation, respiratory difficulty, and nausea.

The worst-case impact would be associated with a major pipeline rupture. The proposed sour gas/condensate pipeline associated with the interim gas processing project alternative is approximately 5 miles long (about 6 miles of pipe), 12 inches in diameter, and would operate at a pressure of 1200 pounds per square inch (psi). The proposed sour gas/condensate pipeline would tie-in with the Chevron Carter Creek gas gathering system (refer to Map G-1). Because of the high operating pressure any H_2S released during a rupture would mix rapidly with ambient air and disperse downwind. The automatic safety measures would cause a quick system shutdown in the event of such an incident. Therefore, short-term exposures are of the greatest interest in this analysis.

In order to be conservative, a worst-case in which the pipeline was ruptured and depressurized to ambient conditions was assumed. The quantity of H_2S that could be lost from the pipeline was estimated from the ideal gas law, considering the compressibility of natural gas. This results in an estimate of approximately 1572 pounds of H_2S that might be lost to the atmosphere from a complete pipeline break. The release rate was estimated by assuming that the total 5 mile pipeline would depressurize in 10 minutes so that short-term effects could be conservatively assessed. This equates to average emission rate of 2.5 pounds of H_2S per second.

The effect of such a release was modeled under very stable (Class F), low wind speed (2.0 meters/second) conditions using the EPA PTDIS model. Because the release of H_2S-containing gas under pressure would cause the gas to vigorously mix with the ambient air, the air-gas mixture would be expected to initially behave as an ideal gas. Thus, the settling effect of the heavier H_2S was not considered. The model input was designed to yield a final effective emission height of approximately 3 meters in order to account for the pressure of the gas.

The model predicted average concentrations that would occur over a 10-minute period following a release. These results predict that exposure to H_2S levels in excess of 500 ppm would occur within 800 meters of the rupture while levels in excess of 300 ppm would occur within approximately 1100 meters of the rupture. Based on this worst-case analysis, no stationary receptors, such as residences would be exposed to hazardous levels of H_2S.

Although the overall risk of exposure to hazardous levels of H_2S has not been quantified for the 12-inch diameter sour gas/condensate pipeline, the chance of a complete rupture occurring during worst-case meteorological conditions is very small. In addition, safety measures committed to by the applicant would serve to minimize the risk of an accidental H_2S release.

Unavoidable Adverse Impacts. This section presents the site-specific unavoidable adverse impacts that would result from the proposed interim gas processing project alternative. Only those resources which would be impacted to a greater degree by the interim gas processing project alternative than by the proposed action or alternatives assessed in the Road Hollow DEA are discussed here.

Air Quality. The operation of the central heater and separation on facility and the four wellhead heaters would result in emission of 118 tons per year of SO_2. These emissions would be well below the Wyoming DEQ air emission standard. Accidental release of H_2S could result in unavoidable adverse impacts.

Mineral Resources. At full operation, the central heater and separation facility and wellhead heaters would consume 15,929 ft^3 of sour gas per hour. This impact would constitute a commitment of a nonrenewable resource.

OTHER CHANGES TO THE TEXT

Changes within the body of the text are indicated with bold type. Only those pages with changes are reproduced.

capacity of 40 million scfd of sour gas, with current plans calling for expansion by the addition of a second 40 million scfd module, for a plant total capacity of 80 million scfd. The second module would be located adjacent to the first module and within the 40-acre site.

The planned arrangement of facilities within the 40-acre proposed plant site is shown in Figure 1-2. Primary components and support facilities for the gas treatment plant would consist of:

- Two gas treatment module units
- A runoff water retention pond
- Wastewater treatment facilities (including drainage systems and a holding tank)
- Ten days' storage for molten sulfur in a heated pit
- One-acre cleared, bermed area for 1 year's solid sulfur storage
- Storage tanks of various sizes for condensate, NGL, amine treating solvent, TEG, makeup water, wastewater, lube oil, and diesel fuel
- A steam boiler and a 45-foot stack for each module
- Stacks 45 feet high for the mole sieve regenerator and diesel generator
- Stacks 150 feet high for the incinerator and flare
- Control room, maintenance shops, administrative buildings, 40-foot microwave antenna, and skid-mounted communications building (50 x 50 feet)

The site would be graded and cleared at the start of construction of the first module in order to provide level construction areas and to control surface runoff. Gravel requirements for surfacing would be 6400 cubic yards. Existing gravel pits are located near Sage, Kemmerer/Diamondville, and Woodruff, Utah.

It is planned that the two modules would be constructed sequentially. The major portions of each module would be skid-mounted to minimize field construction time and labor. This means the skids would be fabricated in a contractor's shop, transported by rail to the closest available rail siding, and trucked to the site. They would then be mounted on foundations and the required piping tie-ins made. A work force of approximately 110 people would be required for installation of the modules and piping tie-ins. Total work-force requirements and schedule for the processing and associated facilities are given in Table 1-2. Each treatment module would be designed to operate 24 hours a day, 7 days per week. The operations and maintenance work force for the project would total 31 people. During full operation, the following major resources would be required: water totaling 32 acre-feet per year for potable uses, boiler makeup, and process system; and total operating electrical demand of 5.6 MW annually for lighting, instrumentation, equipment, and other uses.

The following effluents and wastes would be generated at full operation:

- Approximately 49 tons per year of sulfur dioxide (SO2), assuming a SCOT tail gas unit and overall sulfur recovery of 99.6 percent and wellhead gas H2S concentrations of approximately 0.5 percent.
- Wastewater would be approximately 9.8 acre-feet per year (6 gpm). This water, which would contain H2S, would be disposed of by subsurface injection or in an evaporation pond. **A Ground-water Pollution Control Permit would be required by the Wyoming Department of Environmental Quality prior to injection of wastewater.** Any wastewater accumulation ponds would require permits from the Wyoming Division of Environmental Quality (DEQ) and the State Engineer.
- Solid wastes generated during operation of the facilities would be collected in a centralized location, compacted, if necessary, and transferred by truck to an approved sani-

preconstruction soil condition. Backfilling would be conducted so as to minimize further disturbance of vegetation. The contour of the ground would be restored to permit normal surface drainage. Surfaces would be graded to conform to the existing surface of the adjoining areas, except for a slight crown to compensate for natural subsidence.

Upon completion of construction, all disturbed areas not required for operation would be reshaped as closely as possible to their original contours. These areas would be made to blend into the adjoining areas as well as conditions would permit. The surrounding landscape would be simulated as well as is practicable; for example, in the case of rock outcroppings, coarse fragments would be placed on the disturbed areas.

Materials unsuitable for placing into fill areas, such as excess fill material and construction debris, would be disposed of in a waste area arranged with the landowner, or other authorizing official, in conformance with the Wyoming Department of Environmental Quality (DEQ) regulations.

In strongly sloping and steep terrain, erosion control structures, such as water bars, diversion channels, and terraces, would be constructed to divert water away from the construction site and reduce soil erosion. Stream banks would be restored to original contours or to a more gentle slope.

Structures such as fences, gates, irrigation ditches, and roads damaged during construction would be restored to a condition as good as that existing prior to construction.

The stockpiled topsoil would be placed on the disturbed areas in a uniform thickness to allow the establishment of desired vegetation.

Land Preparation for Seeding. Construction, backfilling, and cleanup operations may cause compaction and alter soil conditions that affect soil productivity and seeding success. The following practices would be used if needed to improve these soil conditions, prevent soil erosion, and provide a favorable seed bed.

The soil would be chiseled with suitable equipment to reduce compaction and improve soil permeability. Pitting and contour furrowing would be done on steeper slopes to increase infiltration and reduce runoff and erosion. A firm and friable seed bed ~~suitable for the establishment of grass stands~~ would be provided.

Suitable mulches and other soil stabilizing practices would be used where necessary to protect unvegetated soil from wind and water erosion and to improve water absorption. Special mulching practices or matting may be necessary in critical areas, where wind and water are serious erosion hazards, to protect seeding and seedlings after germination. Rock mulches would be used in steep-sloping rock outcrop areas to reduce erosion and promote vegetal growth. Cultivation and land preparation operations on steeply sloping areas would be done along the contour to minimize erosion.

Commercial fertilizers would be applied to soil areas with low inherent fertility to establish grass seedings. Application rates would depend on annual precipitation and other conditions. The use of all biochemicals, including fertilizers, would comply with all applicable laws regarding their use. The use of herbicides and pesticides is not planned at this time.

Revegetation. To contribute to a successful revegetation program, methods and procedures would be consistent with local climate and soil conditions. Revegetation of lands disturbed by construction would be in accordance with applicable regulations and permit requirements.

Species and seeding rates effective in controlling erosion would be used to revegetate the disturbed areas. Species would be selected after consideration of climatic adaptation, species adaptation to soil texture, possible adverse conditions such as drought or saline soils, palatability to wildlife, and shrub cover for wildlife. Native plant species that would be given special consideration due to their importance to wildlife include big sagebrush and native grasses. Generally, commercially available native species, as approved by the landowner or surface management agency, would be used.

A seed mixture would be formulated for general use in revegetation on the permit area. Alternative seed mixtures for revegetating critical areas would be formulated on the basis of specific site conditions. Examples of possible seed mixtures include: a riparian seed mixture to be seeded along streams and drainages; a grassland seed mixture consisting primarily of native grass **and forb** species for seeding relatively flat, dry areas; a shrubland **and forb** seed mixture for use in seeding higher-elevation sideslopes; and a high-altitude seed mixture including grass, **forbs** and shrub species that thrive above 7000 feet.

Seed mixtures would be seeded in spring or fall, preferably before mid-April and after mid-October. Seeding dates are weather-dependent and therefore cannot be rigidly set.

Revegetation efforts would be continued until a vegetal cover satisfactory to the landowner or surface management agency is established. The practices that would be used are described below.

A firm, suitable seed bed would be prepared. This would include a mulch of plant residues, or other suitable material, where required. Seed would be planted by drilling, broadcasting, or hydroseeding. The use of a rangeland drill would be the preferred seeding method. Seeds would be drilled on the contour where possible, in order to leave shallow contour furrows for erosion control. Areas not accessible to a rangeland drill would be broadcast by hand on small areas. Broadcast seeding rates would be double those for drill application. Approximately 10 pounds of pure live seed per acre would be seeded by drill application; 20 pounds of pure live seed would be distributed in broadcast applications. Hydroseeding would be done in critical, difficult areas.

The disturbed and reseeded areas would be inspected to monitor the success of erosion control measures and revegetation programs. The areas would be maintained until a satisfactory vegetal cover is established. The monitoring program would help identify problem areas and corrective measures to ensure vegetal cover and erosion control.

In the event a weed control problem on the disturbed areas is identified, local county authorities would be consulted to obtain the most appropriate weed control methods.

Pipeline Construction Methods. Typically, pipelines would be laid in a continuous operation, or a "spread," consisting of equipment and crews handling various types of construction activities for a given pipeline segment. The major activities would be clearing, trenching, stringing, bending, line-up, welding and radiographic examination of pipe, coating and wrapping of pipe, lowering-in pipe, tie-in of pipeline, and cleanup and restoration of site. Figure 1-3 shows the various pipeline construction activities.

Typically, pipeline trenches would be placed 20 feet from one edge of the ROW, thus providing 30 feet of work space on one side and 20 feet of area to store excavated material. Figure 1-4 shows a typical construction ROW cross-section. Hand excavation would be required to reporting. If rerouting or construction monitoring cannot be implemented or would not be effective, the applicant would undertake to recover, in the best reasonably possible manner, specific significant fossil data prior to disturbance.

Water Resources. To reduce adverse impacts associated with discharge of hydrostatic test water, the applicant would implement the following measures:

1. If surface-water discharge is necessary, watercourses with the greatest background flow would be selected.
2. To prevent erosion at discharge sites, test water would be released slowly.
3. Water would be discharged horizontally into a discharge diffuser pipe to minimize flow velocity and prevent potential scour effects.
4. Water would be routed through detention basins prior to discharge or through mechanical filters to reduce the levels of suspended solids and iron.
5. If grease and oil are present, water would be routed through one or more straw bale filters, in sequence, to reduce concentrations to acceptable levels.

To reduce the potential impacts resulting from truck or pipeline spills, spill prevention and containment contingency planning would be implemented. This plan would be incorporated into the Plan of Operations.

To reduce potential impacts associated with water withdrawal from creeks or streams, surface-water withdrawal would be limited to less than 10 percent of the available flow.

Wildlife and Vegetative Resources. Habitat loss and disturbance to important mule deer summering habitat, **sage grouse nesting or strutting habitat** and raptor breeding habitats, including aspen stands, serviceberry shrubland stands, and cliffs, would be reduced by:

1. Avoiding these areas to the extent possible in the siting of all project facilities
2. Including shrub **and forb** reestablishment in the reclamation-revegetation program

Mule deer and wildlife mortality caused by collisions with vehicles on access roads would be reduced by:

1. Ride-sharing by workers commuting to and from site
2. Establishment and enforcement of vehicle speed limits on access roads

Illegal hunting (poaching) and harassment of wildlife would be discouraged by:

1. Prohibiting the transporting of weapons (handguns, rifles, shotguns, hunting bows, etc.) onto the worksite
2. Prohibiting workers from bringing dogs on the worksite
3. Developing and implementing a worker education program

Disturbance of mule deer on crucial winter range would be reduced through ride-sharing by workers to project facilities.

Deterioration of aquatic habitats due to sediment inflow from construction areas would be reduced by controlling surface-water runoff from construction areas with drainage ditches, water bars, and sediment catchment basins.

Livestock Grazing and Range Resources. Disruption to domestic sheep lambing operations would be reduced by avoiding or limiting construction activities near lambing grounds between May 1 and June 10.

Employees would be instructed to report when vehicular traffic or project-related activities result in the killing of livestock. Livestock owners would be

Socioeconomic Conditions. The total number of project-related jobs obtained by local residents would be increased through one or both of the following actions:

1. The applicant or his contractor would work with a local agency, such as the Kemmerer Office of the Wyoming Job Service, when hiring workers for the project. Persons who would be seeking work on the project would be referred to the Job Service to complete appropriate applications. The Job Service would provide facilities for the applicant or contractor to interview potential workers.
2. The applicant would actively recruit qualified applicants for entry-level jobs from among local residents and provide training to prepare them for operating jobs.

The proposed project and associated construction work force would increase the population of affected communities which, in turn, would increase demands on public services (including law enforcement, community recreation, health and social services, and libraries) and would also increase demand on temporary and permanent housing. Worker demand for temporary housing could compete with tourists, business people, and other workers. To reduce these adverse impacts, the following measures would be implemented:

1. To reduce competition for temporary housing, a housing plan would be developed by the applicant. Specific provisions of this plan would be identified as the project nears the projected construction start date when existing conditions in affected communities (e.g., availability of temporary housing and options available) can be more accurately assessed. ~~Examples of what the components of a housing plan could include are given in Chapter 3~~. The final identification of the housing plan components would be specified in the applicant's Plan of Operations before the start of construction.
2. To reduce potential adverse impacts to social service agencies, the applicant would establish a monitoring system in conjunction with those agencies. If it is determined that social service agencies experience significant staffing or facility shortages due to demands by project-related workers (which would be documented by the agency), they would receive assistance from the applicant to help meet the additional needs resulting from the project.

The proposed project would increase enrollments (50-160 students between 1984 and 1986) and expenditures in Lincoln County School District No. 1, while project-related ad valorem tax revenues would accrue to Lincoln County School District No. 2. Because Wyoming is in the process of restructuring its school finance procedures, it is unclear whether or not District No. 2 could or will be made by law to transfer funds to District No. 1 to offset project-related operation costs.

The applicant would monitor this situation through contact with the respective school and Wyoming state officials to identify or create mechanisms to help defray District No. 1 expenses during operation-related use periods. Applicant participation would be only for school overload situations created by the Road Hollow project operation-period use.

To reduce traffic congestion within communities housing the work force, workers would be encouraged to ride-share. Other transportation mitigation measures may be appropriate depending on the structure of the housing plan. A more specific transportation plan would be integrated with the housing plan developed in the Plan of Operations.

ALTERNATIVES

The EA process requires identification of reasonable alternatives and consideration of environmental, social, and economic effects of these alternatives. In the following sections, brief descriptions are presented for all reasonable alternatives to the proposed action that were subjected to further analysis. Alternatives not selected for more detailed analysis are identified and reasons for their not being further considered are given. Only those aspects of the alternatives that are different from the proposed action are discussed.

No Action Alternative

If the BLM does not issue the ROWs necessary for the proposed action, the applicant could not construct the proposed treatment plant or ancillary facilities because the proposed treatment plant and almost the entire system of linear facilities would be located on public land.

The no action alternative would affect the human environment by not allowing recovery of 80 million cubic feet of gas a day and thus would increase the country's dependency on foreign supplies. In addition, future income and construction and operation jobs that would be generated by the proposed action could not be realized. Estimated ad valorem and mineral/severence taxes per year generated by the proposed action would be approximately $18 million (based on estimates for 1986); construction work force would total **225** at the peak of construction and operation work force (including associated indirect jobs generated) would average 80 over the 20-year life of the project.

In general, the impacts summarized in Chapter 1 and discussed in Chapter 3 for the proposed action would not result from the no action alternative.

Project Components

Gas Treatment Alternatives.

Use of Existing Facilities. The potential use of existing gas treatment facilities at Chevron's Carter Creek plant and Amoco's Whitney Canyon plant was explored with representatives of both companies. The response of the companies was that capacity in their plants is committed until the plants become operational and the facilities are fully tested. Because of the timing of field development plans, use of existing facilities is not considered feasible due to uncertain processing capacity within the applicant's field development schedule. Although use of existing facilities is not considered feasible for the purpose of this EA, the use of Amoco and/or Chevron facilities will be pursued as part of ongoing negotiations.

Gas Treatment Plant Size and Capacity. In August 1982, the applicant's geologists and reservoir engineers assessed the estimated recoverable reserves in the structure to be produced at Road Hollow between 100 and 200 bcf. They concluded that a 40 million scfd plant and a one-rig drilling program was optimum for producing those reserves because:

- Present value profit (a measure of netback on capital invested) was as good as for an 80 million scfd plant and better than for a 120 million scfd plant.
- Pre-investment (in more facilities) risks caused by geological and reservoir unknowns are minimized.
- Design changes can be incorporated in another 40 million scfd module if gas composition varies without substantially changing project economics.

Expanding the Road Hollow project beyond 80 million scfd could not be justified technically, economically, or based on capacity considerations because:

from the proposed plant site via Whitney Canyon Road is 34 miles.

Alternative 2. A second alternative for providing construction and permanent access to the proposed plant site would be to construct a new road in the existing 138-kV powerline corridor from Section 32, T20N, R117W, to Section 17, T19N, R119W (Map G-1). Total distance would be 22.9 miles, with 19.3 miles of new construction. The route would cross the Little Muddy Creek and a portion of FMC mine lands. The majority of the alignment would traverse low ridges and intermittent drainages and would thus result in numerous sections of road with a grade, increased need for cut and fill and other earth moving, and additional construction costs. The newly constructed road would also be used as a sulfur haul road. This alternative was not analyzed further because there would be:

- Increased potential for hydrologic and aquatic ecology impacts
- Increased disturbance to soils and vegetation in steep terrain
- Relatively high construction, maintenance, and haulage costs
- Potential for future relocation on FMC minelands

Alternative 3. A third alternative for providing construction/permanent access and a sulfur haul road would be to make maximum use of an existing road that parallels the Little Muddy Creek from Highway 189 to Section 13, T19N, R118W. Total distance would be 32.2 miles, with 11.8 miles of new construction. Utilization of this alignment would be require one crossing of the Little Muddy Creek. The route would parallel portions of the Oregon Trail for approximately 6 miles and would cross approximately 6.9 miles of fee land that supports heavy range use.

This alternative was not analyzed further because there would be:

- Potential significant impacts to the Oregon Trail, livestock grazing, and aquatic ecology in Little Muddy Creek
- Increased haulage and maintenance costs not justified by construction savings
- Anticipated landowner opposition due to heavy range use along the creek

Mitigation Alternatives

Fencing of the proposed eastern access and sulfur haul road was identified by the BLM to be analyzed as a mitigation alternative. Approximately 20 miles (MP 1 to 20.5) of four-strand wire fence (Antelope type 4 with three upper barbed wire strands and one lower barewire strand) would be constructed on both sides of the 100-foot permanent right-of-way. This type of fence would effectively prevent livestock access within the right-of-way but would allow relatively free movement of game such as mule deer and antelope. Gates for providing seasonal livestock movement across the ROW, **hunting access, and other area recreation** would be installed at locations specified by BLM. A summary of the findings from this analysis is presented below in the section for summary and comparison of impacts.

Construction, Operation, Maintenance, and Abandonment Procedures for Alternatives

If any of the alternatives are selected, the applicant would undertake construction, operation, and maintenance using the same practices and procedures as specified for the proposed action.

Applicant-Committed Practices

The applicant would undertake a number of design, construction, and restoration practices that would be applicable to the alternatives discussed. These practices have been specified above in the discussion for proposed action.

AUTHORIZING ACTIONS

This section identifies the authoriz-

Sacramento will determine whether any individual permits are required.

U.S. Environmental Protection Agency (EPA)

Under the Resource Conservation and Recovery Act of 1976 (as amended), the applicant must fill out and submit to the EPA a Notification of Hazardous Waste Activity. Gas sweetening plants are required to file at least Part A of the Hazardous Waste Notification requirements. Wastes associated with refining, such as solvents and sludges produced by wastewater and air treatment, may be classified as a hazardous waste. The EPA will review the information supplied by Exxon to determine if a Hazardous Waste Permit would be required.

Federal Communication Commission (FCC)

The FCC requires application for an operating license for certain microwave communication systems. Should Exxon require a microwave station(s), it would submit application Form 402 for licenses in the Operational Fixed Microwave Service. Authority for issuing the microwave licenses is contained in Volume V, Parts 90 and 94 of 47 CFR of the FCC Rules and Regulations, which govern private repeater stations.

STATE

The applicant is responsible for obtaining necessary grants, permits, and approvals from the following Wyoming state agencies.

Department of Environmental Quality (DEQ)

Any facilities that may cause emissions of air pollutants in Wyoming must obtain Air Quality Permits to Construct and Operate, as per Section 21 of the DEQ, Wyoming Air Quality Standards and Regulations.

Subsurface discharges to ground water, other than those discharges associated with the production of oil and gas covered under the Wyoming Oil and Gas Conservation Commission's program, require Wyoming Ground Water Pollution Control/UIC (Underground Injection Control) Permits.

Any project involving construction, installation, or modification of a sewerage system, treatment works, disposal system, or other facility capable of causing or contributing to pollution requires a Permit to Construct, Install, or Modify Public Water Supplies and Wastewater Facilities.

Processing plant surface water discharges (i.e., if not a zero-discharge facility), hydrostatic test water, sanitary wastewater, and any other potential project water discharges would require National Pollutant Discharge Elimination System (NPDES) permits for discharges into state waters.

State Engineer

A Permit to Appropriate Ground Water must be obtained from the State Engineer prior to initiation of water well construction. Temporary Water Rights for Construction and Permits to Appropriate Surface Water must be obtained from the State Engineer if the applicant plans to appropriate surface water for construction, hydrostatic testing, or operation. **If water is purchased from Woodruff Narrows and transported through Chevron's pipeline to Carter Creek and on to the proposed plant site, copies of all agreements and contracts, including conveyance in Chevron's pipeline, would be filed with the State Engineer. It may also be necessary to petition the Board of Control for a change in use and place of use.**

Wyoming statutes require that Approvals for Water Supply Facilities, Wastewater Disposal Facilities, Retention Ponds, and Other Facilities be obtained from the State Engineer before construction begins on any development involving the use of water within Wyoming.

Public Service Commission

A Certificate of Public Convenience and Necessity would be needed from the Public Service Commission for the power transmission line and possibly for the plant and pipelines. The commission will be contacted by the applicant to ascertain what specific project components would require a certificate.

State Highway Department

Any pipelines **or other facility** encroaching on state highway ROWs would require a Utility Crossing Permit from the State Highway Department, Rock Springs District.

LOCAL JURISDICTIONS

Lincoln County

Under Lincoln County's Land Development and Permit Process, a Zoning Certificate must be obtained from the Office of Planning and Development prior to the site development and construction. Approval for crossing county roads must be obtained from the county commissioners.

Uinta County

Uinta County's Land Use Resolution requires that a Zoning Certificate be obtained for aboveground facilities developed in Uinta County. Approval for crossing county roads must be obtained from the county commissioners.

Private Landowners

Permission to cross private lands would need to be obtained from appropriate landowners.

SCOPE OF ANALYSIS

GEOGRAPHIC AREA OF INFLUENCE

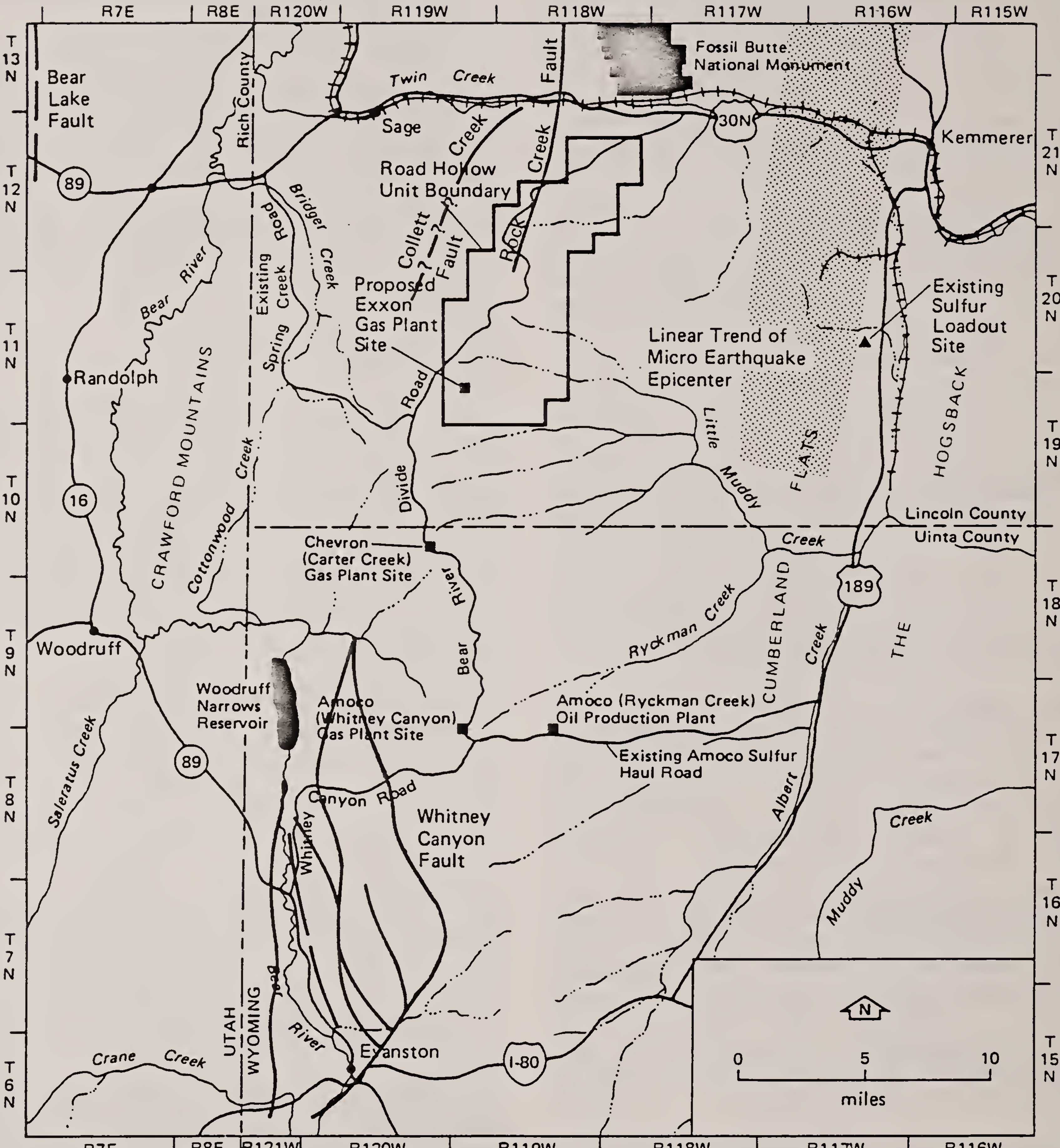
Baseline data were complied for each resource topic in geographic areas of influence determined for the impact analysis. These geographic areas of influence are defined and summarized for each resource topic in Chapter 2. Generally, these areas of influence included:

- The area in the immediate vicinity of the proposed plant site and other project components.
- A larger area of influence that extended beyond sites of surface disturbances and construction activities to a distance where impacts could no longer be identified with the project. For many resources (e.g., recreation, air quality, socioeconomic conditions), this larger area extended a considerable distance beyond construction sites and designated ROWs.

IMPACT ANALYSIS GUIDELINES

In accordance with CEQ regulations, impact assessments were conducted for each resource topic in order to provide sufficient analysis for determining whether the proposed action or alternatives would result in significant impacts to the environment. In order to provide a framework for analysis of potential impacts, indicators of impact significance are presented for each resource topic in Chapter 3. The intent of these indicators is to provide a quantitative or semiquantitative threshold value beyond which significant impacts may be indicated. If threshold values are approached or exceeded, then a more detailed analysis and professional judgment are required to reach a determination as to whether significant impacts would occur. Indicators of significance are therefore used to define potential impact topics warranting detailed analysis and to focus on the necessary level of effort required for analysis and determination of impact significance.

Impacts that would result from the Road Hollow project were evaluated assuming baseline conditions in defined geographic areas of influence as they would exist when Road Hollow would start construction in the summer of 1983. Thus the determination of availability and condition of existing resources, used as a base for comparison and evaluation of impacts, takes into account the effects


R7E
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T 20 N
T 19 N
T 18 N
T 17 N
T 16 N
T 15 N
Bear Lake Fault
Rich County
Twin Creek
Sage
Fault
Fossil Butte National Monument
30N
Kemmerer
Creek
Rock Creek
Road Hollow Unit Boundary
Collett Fault
Bridger Creek
Existing Road
Spring Creek
Proposed Exxon Gas Plant Site
89
Bear River
Randolph
Linear Trend of Micro Earthquake Epicenter
Existing Sulfur Loadout Site
HOGSBACK
FLATS
Little Muddy
Road
Divide
CRAWFORD MOUNTAINS
Cottonwood Creek
16
Lincoln County
Uinta County
Creek
Chevron (Carter Creek) Gas Plant Site
Bear River
189
CUMBERLAND
Creek
THE
Ryckman Creek
Woodruff
Woodruff Narrows Reservoir
Amoco (Whitney Canyon) Gas Plant Site
Amoco (Ryckman Creek) Oil Production Plant
Existing Amoco Sulfur Haul Road
Saleratus Creek
89
Canyon Road
Whitney Canyon Fault
Whitney
Albert
Creek
Muddy
N
0
5
10
miles
Bear River
UTAH
WYOMING
Crane Creek
Evanston
I-80
R7E
R8E
R121W
R120W
R119W
R118W
R117W
R116W

Proposed Action

Four streams would be potentially affected by the proposed action: Road Hollow Creek, Chicken Creek, Spring Creek, and Bridger Creek (Table 2-8). All of these streams would be crossed by linear facilities of various types. All of the streams are intermittent, with flow in snowmelt and precipitation runoff periods, primarily in the spring and early summer. All of the streams are characterized by low flow, narrow channels, silt substrate, frequent high turbidity, and fairly high water temperature. Additional upper headwater areas of other streams with very low and intermittent flow would also be crossed.

The four streams are included in two drainage systems. Two streams (Road Hollow Creek and Chicken Creek) are in the Little Muddy Creek - Muddy Creek - Black's Fork drainage system on the eastern and southern side of the Bear River Divide. Two streams (Spring Creek and Bridger Creek) are in the Bear River drainage system on the western and northern side of the Bear River Divide.

None of the streams support populations of any fish species in any period of the year (Wyoming Game and Fish Department 1981a, undated). All of these streams are included in Class 5 (very low production, often incapable of sustaining a fishery) by the Wyoming Game and Fish Department.

Important fish species are defined in this EA as: 1) species considered as rare or sensitive by BLM or the Wyoming Game and Fish Department, and 2) game species.

No federal listed or proposed threatened or endangered fish species occur in the project site area. The Bonneville cutthroat trout occurs only in the Bear River (Wyoming Game and Fish Department 1981a,b, undated). The Colorado River cutthroat trout has not been recorded in any streams or rivers in the geographic areas of influence (Wyoming Game and Fish Department 1977, undated). The bluehead sucker has been recorded only in Muddy Creek, Black's Fork, and the Bear River (Wyoming Game and Fish Department 1981a, undated). All three of these species are considered as rare or sensitive by BLM or the Wyoming Game and Fish Department. In addition, the Bonneville cutthroat trout is currently a candidate species for federal listing as threatened or endangered, pending planned development of alternatives to listing by federal and state resource management agencies.

Another species which occurs in the geographic area of influence (Twin Creek and Muddy Creek) is the leatherside chub. This species is listed as uncommon by Wyoming Game and Fish Department with further designations as a species of "high interest, with declining populations and/or habitat conditions."

Alternatives

Four streams would be potentially affected by alternatives: Chicken Creek, Twin Creek, Shurtleff Creek, and Clear Creek (Table 2-8). These streams would be crossed by linear facilities of various types. Characteristics of the streams are the same as those of streams described under the proposed action. Twin Creek is part of the Bear River drainage system, and Shurtleff Creek and Clear Creek are part of the Little Muddy Creek - Muddy Creek - Black's Fork system.

Three of the four streams (Chicken Creek, Shurtleff Creek, Clear Creek) do not support fish species in any period of the year (Wyoming Game and Fish Department 1981a). These three streams are included in Class 5 (very low production, often incapable of supporting a fishery) by the Wyoming Department of Fish and Game. Eight fish species have been recorded in Twin Creek (Table 2-9) (Wyoming Game and Fish Department, undated), which is considered a Class 4 stream (low production waters, fisheries frequently of local importance but generally incapable of sustaining substantial fishing pressure). **Currently** game fish species (trout and similar species) have been recorded in Twin Creek in the project site area. **Historically, there were game fish in Twin Creek, but habitat degradation has led to their decline and possible extinction. There are game fish in Rock Creek, upstream of Twin Creek, and during favorable conditions these fish may drift into Twin Creek.**

Alternatives

The study area for the alternatives contains the same visual resource characteristics as described for the proposed action.

TRANSPORTATION

Geographic Area of Influence

The geographic area of influence for the proposed action and alternatives includes the area within Lincoln and Uinta counties bordered by U.S. Highway 30N, U.S. 189, Interstate 80, and the Utah-Wyoming border.

Proposed Action

The northern boundary of the geographic area of influence, U.S. Highway 30N, provides access to the well field and proposed plant site from the community of Kemmerer via State Highway 89 and the existing Spring Creek (Red Eye) gravel road. U.S. Highway 189 borders the eastern side of the area of influence and could provide access from Kemmerer to the south, connecting with the proposed sulfur haul road at Elko, or connecting south with the existing haul road used by Amoco for trucking sulfur. Interstate 80 forms the southern border of the area of influence, connecting Evanston at the southwestern corner with U.S. 189 to the east, and running north to the Lincoln County line (see Map 11).

Roadway characteristics, traffic volume, and accident information are described below for each of the affected roads identified above.

U.S. 30N is a two-lane paved road running east-west between Kemmerer and Sage. A loop around the business portion of Kemmerer allows commercial vehicles on U.S. 30N to avoid having to pass through the community. Traffic volume, expressed in average daily trips (ADT), for the two segments of roadway between Sage Junction and Kemmerer is as follows:

	All Vehicles, by Year		
Roadway Segments	1979	1980	1981
First 22.3 miles	1330	1410	1450
Next 2 miles	2090	2170	2200

	Commercial Vehicles, by Year		
Roadway Segments	1979	1980	1981
First 22.3 miles	545	670	740
Next 2 miles	593	708	770

	Traffic Accidents (U.S. 30N), by Year		
	1979	1980	1981
Total Accidents	37	24	32
Commercial Vehicles	13	8	15

Source: Wyoming State Highway Department 1982.

Wyoming **89** is a two-lane paved road running east-west from the state line to U.S. 30N. Average daily traffic for this 4.1-mile section of road is as follows:

	1979	1980	1981
All Vehicles	660	750	800
Commercial Vehicles	124	132	150

Source: Wyoming State Highway Department 1982.

U.S. 189 is a two-lane road running north-south from I-80 to Kemmerer. Some 24.4 miles of U.S. 189 have been programmed for improvements (upgrading surface and widening) between 1983 and 1986. Traffic volume on this road over the past 3 years is as follows:

direction, and atmospheric stability class based on 5 years of data collected at Rock Springs. Worst-case conditions of Class 2 stability and 0.5 meter per second (m/s) wind speed were used in the short-term simulations. Class II stability corresponds to moderately unstable or turbulent conditions.

Results of the dispersion modeling simulations are summarized in Table 3-2 along with applicable federal and state ambient air quality standards. Concentration isopleths of the annual average SO2 impacts are shown in Figure 3-1. Operation of the plant would not cause a violation of any applicable air quality standards and thus no significant impact is expected.

Noise sources during operation would include pumps, process equipment, and vehicles. Noise from these sources is expected to be minor and to affect only the immediate vicinity. No residences would be affected by project operation.

Cumulative Impacts. The increases in ambient pollutant levels as a result of this project would be too low to cause any appreciable cumulative impact with Chevron's Carter Creek and Amoco's Whitney Canyon gas processing plants, the only other significant emission sources in the area.

Although the exact processes responsible for increasing acidity in precipitation are unknown, acid precipitation has been linked to anthropogenic emissions of sulfur oxides and, to a lesser extent, nitrogen oxides. The major cause of these emissions is fuel combustion. The atmospheric transport, transformation and deposition of these emissions is not well understood at this time and is the subject of much controversy. It is thought that pollutant emissions may be transported long distances before being transformed into acid precipitation. Thus, when considering acid rain potential it is necessary to consider regional emissions in addition to those from a given project.

Regional emissions of sulfur dioxide (SO2) and nitrogen oxides (NOx) are generally dominated by large sources such as power plants and vehicular exhaust. The contribution of the proposed project to existing regional sources would be a relatively small amount. Thus, the contribution to acid precipitation, if any, would be expected to be insignificant.

It should be noted that the actual impact of acid precipitation on an area would depend upon the soil characteristics or buffering capacity of the lake. Areas with alkaline soils or good buffering capacity (such as the soils in the vicinity of the proposed project) would be impacted less than areas without these characteristics.

Alternatives

Processing and Disposal of Hydrogen Sulfide. The wellhead gas would have H2S concentrations not exceeding 0.5-0.6 percent. Design flexibility would be provided to process up to 1.0 percent H2S, resulting in a doubling of SO2 emissions, for a total of 98.4 tons per year (t/yr). Project impacts as reported in Table 3-2 would also double. However, resulting impacts would still be well below all applicable air quality standards and no significant impacts would occur.

An alternative to the proposed Claus sulfur recovery and tail gas cleanup for H2S is the ammonium thiosulfate process (ATS). Emissions from the process would be 54 t/yr of SO2 and 500 ppm ammonia (NH3) from the absorber stacks. These SO2 emissions would be only slightly higher than the 49 t/yr level for the proposed project and are not expected to result in any significant impacts. There is no ambient air standard for NH3. The 500-ppm release concentration is expected to the general erosion control, restoration, and revegetation measures in Chapter 1), most disturbed areas should **have a native grass cover reestablished within 3 to 5 years. Reestablishment of shrubs and forbs would be somewhat slower.** The soils data in Appendix C indicate that some areas may be difficult to reclaim due to adverse physical and chemical soil properties, such as: absence of and/or restricted topsoil (or salvageable soil) supply, and excess salts and alkalinity. Additionally, the semiarid condition in the project region could inhibit reclamation efforts. Since the applicant has committed to "reclaiming disturbed areas to the satisfaction of the surface management agency or as agreed to with private land owners," no significant impacts to the soils resource would be expected to occur from implementation of the proposed action.

Cumulative Impacts. Implementation of the proposed action would contribute an insignificant amount of additional soil erosion to the overall (present and future) amount of soil erosion occurring in the project region.

Alternatives

Acreages of soil surface disturbance that would result from construction of the various alternatives are presented in Table 1-1. Impacts to the soil resource associated with the alternatives are generally similar to those discussed for the proposed action.

Alternative Access and Sulfur Haul Road. Selection of this alternative would reduce soil disturbance during the construction phase by about 494 acres, and would reduce the amount of soils removed from production (over the life of the project) by about 184 acres.

Mitigation Alternative of Fencing. Fencing of the proposed eastern access and sulfur haul road (MP 1.0-21.0) would reduce livestock **and wildlife** disturbances on reclaimed areas within the fenced ROW, thereby potentially increasing revegetation and reclamation success on these areas. This alternative would also reduce off-road soil disturbances and potential increases in sedimentation and turbidity of receiving streams by controlling ORV access to lands outside the fenced ROW.

Cumulative Impacts. Cumulative impacts to the soil resource resulting from construction and operation of the alternatives would be the same as discussed for the proposed action.

WATER RESOURCES

Indicators of Impact Significance

Indicators of impact significance for water resources include the rules and regulations of the agencies overseeing aspects of the project. An indicator of significance for water quality would be the water quality standards established by the Wyoming DEQ. A significant impact would be indicated if these water quality standards were exceeded. For potential hydrologic impacts, an indicator of significance would correspond to a specific percentage flow reduction in stream or spring flow. This flow reduction could occur as a result of the storage and diversion of surface water or reduced spring outflow resulting from groundwater withdrawal. In addition, a specific drawdown in the piezometric surface of the aquifer providing ground water would be an indicator of significance. The specific numbers corresponding to these indicators of significance would depend on the nature of the stream or aquifer in question.

Proposed Action

In general, no significant water resource impacts are expected to result from the construction, operation, or abandonment of the Road Hollow project. During construction of the project, soil would be disturbed along ROWs for pipelines, roads, and well gathering lines, as well as at the plant site. Some of

Operation, Maintenance, and Abandonment. General impacts described for the proposed action also apply to alternatives.

Mitigation Alternative of Fencing. Implementation of the mitigation alternative of constructing a livestock fence along the permanent eastern access road would probably not prevent movements of mule deer, pronghorn, and elk. Depending on the height of the fencing, limited mortality of mule deer may occur from animals being caught on the upper portion of the fence while jumping when deep snow is present (Papez 1976).

There is also some potential for increased wildlife roadkills if the fencing mitigation is implemented. Because of the establishment of relatively lush vegetation and exclusion of livestock use within the ROW, wildlife could be attracted to the ROW.

Cumulative Impacts. No significant adverse cumulative impacts would result from habitat loss associated with construction of facilities included in alternative actions. Cumulative disturbance resulting from human presence and activity associated with construction, operation, maintenance, and abandonment of alternative Road Hollow project facilities and other projects would result in impacts similar in magnitude to those discussed for the proposed action.

AQUATIC ECOLOGY

Indicators of Impact Significance

No indicators of impact significance were established for the aquatic ecology impact analysis because of the lack of important aquatic resources (especially fish) in the geographic area of influence.

Proposed Action

Construction. Construction of the plant and gas gathering system may result in short-term stream sedimentation and increased water turbidity in upstream portions of Road Hollow Creek and Chicken Creek, depending on flow conditions during the construction period. Both of these streams are intermittent and support no fish populations. It is considered unlikely that substantial amounts of sediment would be transported to Muddy Creek and Black's Fork, which are perennial and support important game and nongame fish populations. Applicant-committed practices would generally reduce the magnitude of potential stream sedimentation and turbidity impacts.

Operation, Maintenance, and Abandonment. Operation, maintenance, and abandonment of facilities included in the proposed action are expected to result in no significant impacts on aquatic biota.

Cumulative Impacts. Construction, operation, maintenance, and abandonment of facilities included in the proposed action are expected to result in no significant cumulative adverse impacts on aquatic biota.

Important Species. Construction, operation, maintenance, and abandonment of proposed and alternative facilities are expected to result in no significant adverse impacts of any type on important fish species, including the Colorado cutthroat trout and Bonneville cutthroat trout.

Alternatives

Construction. Construction of the alternative gas gathering system across Chicken Creek, the alternative 2 sales gas pipeline across Twin Creek, and the alternative condensate-NGL pipeline across Shurtleff Creek and Clear Creek may result in some short-term stream sedimentation and increased turbidity, depending on flow conditions in the construction period. No significant adverse impacts of any type on fish populations in the Bear River (downstream of Twin no significant impacts on aquatic biota. Potential accidental releases of condensate, NGL, or H S could have locally important, short-term adverse impacts on aquatic biota, depending on the location, time, and volume of the release.

Cumulative Impacts. Construction, operation, maintenance, and abandonment of facilities included in alternative actions are expected to result in no significant cumulative adverse impacts on aquatic biota.

LIVESTOCK AND RANGE

Indicators of Impact Significance

Impacts to livestock and range were considered potentially significant if any of the following conditions were met:

- Construction and operation of the proposed action or alternatives would remove 1 percent (or more) of the available AUMs within a grazing allotment on a long-term basis (i.e., for longer than 5 years).
- Construction and operation of the proposed action or alternatives would impede livestock movements to the point where the indicator of 1 percent listed above would be exceeded, due to a large area becoming inaccessible to livestock.
- Construction of the proposed action or alternatives would severely disrupt lambing operations between May 1 and June 10.
- Construction and operation of the proposed action and/or alternatives, when considered together with the proposed projects listed in Appendix A (i.e., cumulative impacts), would remove 5 percent (or more) of the available AUMs within a grazing allotment on a long-term basis (i.e., for longer than 5 years).

Proposed Action

Construction of the proposed action would result in a short-term (e.g., estimated 3 to 5 years required for restoration of vegetation and AUMs) loss of about 101 AUMs for cattle or 111 AUMs for sheep. These short-term AUM losses correspond to 0.15 percent and 0.17 percent, respectively, of the estimated 66,000 AUMs available within the Cumberland/Uinta grazing allotment (refer to Table 3-5). This potential impact is not considered significant.

Long-term (e.g., over the life of the project) AUM losses potentially attributable to the proposed action are about 32 AUMs per year for cattle or 36 AUMs per year for sheep (refer to Table 3-5). These long-term AUM losses would represent about 0.05 percent of the estimated total AUMs available within the Cumberland/Uinta allotment, and are not considered significant.

Short- and long-term AUM losses have the potential for increasing livestock wildlife competition within the geographic area of influence. This potential impact is not considered significant.

Construction and upgrading of the end of the proposed eastern access/sulfur haul road near Highway 189 has the potential to disrupt lambing operations in this area. Limiting construction activities in this area between May 1 and June 10 would help minimize impacts to lambing operations. Disruptions to lambing operations in this particular area have occurred and are presently occurring; thus potential disruptions attributable to road construction in this area would not be considered severe.

An unquantifiable number of livestock losses would occur along access and haul roads associated with the proposed action. This impact could be reduced through reimbursement of operators for lost cattle and sheep by the applicant. No significant obstructions to livestock movements would result from the proposed action.

malfunction could cause a release of H2S-rich gas. **Should a release take place, elevated concentrations of H2S could occur in the vicinity of the release. Dispersion modeling studies of sour-gas pipeline rupture under worst-case meteorological conditions (stable, low wind speed), (p. 25) indicate that hazardous levels could occur within approximately 1 kilometer downwind of the release point. No residences or other stationary receptors are located within 1 kilometer of any potential release point.**

The probability of a gathering line rupture or damage to plant facilities cannot be quantified. However, if damage occurs, four factors would limit the amount of H2S emitted and potential impacts to health and safety: 1) wells would be equipped with automatic shut-in valves at the wellhead that would close if there was a loss of line pressure or with high pressure in the line; this feature would therefore also prevent rupturing because of overpressure; 2) since the estimated H2S content of the gas to be processed is only 0.5 percent, the amount of H2S released during a rupture would be relatively low compared to that from similar operations in the area; 3) atmospheric dispersion in the project region is typically good, with an average wind speed of about 10-14 miles per hour, and because of the relatively low concentrations of H2S in the gas, H2S levels would be expected to decrease rapidly with distance from the rupture; 4) gathering lines and plant facilities are located in a relatively remote area away from any population centers.

During normal operations, SO2 emissions would come from the sulfur recovery unit's tail gas incinerator. However, during periods of plant upset, SO2 would be emitted from the plant's emergency flare. These emissions would persist for only a short period of time. Impacts from flaring were estimated using the EPA PTMAX model (Turner and Busse 1973). Results indicate that, even under worst-case meteorological conditions, SO2 concentrations would be less than 50 percent of the 3-hour ambient standard.

An alternative to the removal of sulfur from the processed gas stream is the use of the ATS process. This process would require the delivery of ammonia to the plant site by one truck every 4 days. In the event of a truck accident, a large quantity of liquid ammonia may be spilled. Most of this material would be expected to pool or soak into the soil. However, a certain amount would vaporize and be dispersed in the atmosphere. The amount that would vaporize would be determined by the temperature, wind speed, and relative humidity.

As previously discussed, atmospheric dispersion conditions in the project area are typically good with average wind speeds of approximately 10 miles per hour. Thus, ammonia vapor would typically be transported and diluted relatively quickly. The project area is also rural in nature. Because of these factors, no residences would be expected to be exposed to hazardous levels of ammonia.

ENERGY USE

The following analysis presents the primary energy inputs to the facility, the major ancillary energy inputs, and the energy-containing outputs of the facility. This allows calculation of the amount of energy lost due to plant operation. Energy required to construct the plant and to transport workers to the plant is not included in the analysis because these are not major uses of energy compared with plant operations.

According to the applicant, each plant unit would have three major energy inputs. The most important is 40 million scfd of input sour gas. Some of this gas would be burned as fuel for the plant and

Input	Amount/Day	Btu/Unit	Btu/Day
Sour Gas	40×10^6 sfc	1295 Btu/scf	5.18×10^{10}
Electricity	67,200 kWh	3410 Btu/kWh	2.29×10^8
Diesel Fuel	164 gal	1.44×10^5 Btu/gal	2.36×10^7
Total for 1 Unit	---	---	5.21×10^{10}
Total for 2 Units	---	---	1.04×10^{11}

These inputs would be used to produce the major energy-containing outputs. The plant would produce 31 million scfd of sales gas (excluding gas used in the plant processes), 416,000 lb/d of natural gas liquids, 552,000 lb/d of condensate, and 16,780 lb/d of sulfur for sale. The energy content of these products is summarized below.

Product	Amount/Day	Btu/Unit	Btu/Day
Sales Gas	31×10^6 sfc	927	2.87×10^{10}
Natural Gas Liquids	416,000 lb	20,200 Btu/lb	8.40×10^9
Condensate	552,000 lb	23,765 Btu/lb	1.31×10^{10}
Sulfur Product	16,780 lb	3685 Btu/lb	6.18×10^6
Total for 1 Unit	---	---	5.02×10^{10}
Total for 2 Units	---	---	1.00×10^{11}

The ratio of energy **outputs** to **inputs** for the plant is approximately 0.96. This means that 96 percent of all the energy that would be input to the processing plant (including the energy in unprocessed natural gas) would be recovered as usable energy.

Ammonium Thiosulfate Process (ATS)

According to the applicant, the ATS process would be comparable to the proposed Claus system in sulfur-removal efficiency but would produce more excess steam as a by-product. This could reduce the amount of fuel gas required for process heat in the plant and could thus increase the ratio of energy outputs to inputs.

SUGGESTED MITIGATION

Mitigation measures were developed based on findings from impact assessment. A large number of these were incorporated by the applicant into the proposed action project description and the section on applicant-committed practices (Chapter 1). These were assumed to be implemented for the purposes of the analysis, since the applicant would be required to incorporate them into the Plan of Operations. In addition, BLM standard stipulations and mitigation measures imposed or required by federal, state, county, or municipal laws or regulations were assumed for purposes of analysis.

The following mitigation measure was not assumed for purposes of analysis, but it is recommended to further mitigate impacts that would result from the proposed action. The applicant and the BLM should monitor the success of required revegetation efforts until ground cover is reestablished in order to control erosion. This monitoring program should also include evaluation of methodologies and potential for reestablishing wildlife habitat. Evaluation and implementation of a program for reestablishment of wildlife habitat should be accomplished by the applicant in consultation with the BLM and with input from other appropriate management agencies.

UNAVOIDABLE ADVERSE IMPACTS

This section presents the site-specific unavoidable adverse impacts that would result from the proposed Road Hollow project. This discussion supplements and is tiered to a more general discussion presented in Chapter V of the Kemmerer EAR.

AIR QUALITY

The operation of the gas treatment facility would result in emission of 49 tons per year of SO2. These emissions would be well below the Wyoming DEQ air emission standard. Dust pollution would increase due to additional vehicle traffic in the area during construction of the gas treatment plant and ancillary facilities. Accidental release of H2S could result in unavoidable adverse impacts **of the magnitude discussed under Health and Safety.**

MINERAL RESOURCES

At full production, the plant would process 80 million cubic feet of well gas per day. Construction of the plant and ancillary facilities would require approximately 120,000 yards of gravel. Both of these impacts constitute a commitment of nonrenewable resources.

PALEONTOLOGY

Significant fossils within construction ROWs that are not detected and recovered during surficial inventories, construction monitoring, or preconstruction data recovery would be adversely affected by construction activities. Significant fossils in locations outside construction areas could be removed by hobbyists or commercial collectors. Both of these impacts constitute a commitment of a nonrenewable resource.

SOILS

An undetermined amount of increased soil erosion would occur from surface disturbance of areas during the construction of the proposed project.

WATER RESOURCES

Small, short-term increases in the suspended solids content and turbidity of affected drainages would result from construction activities. The magnitude and duration of such increases would decrease as reclamation and revegetation efforts became successful.

The quantity of contaminants transported in affected drainages **could** increase as a result of **accidental** spills and other discharges.

VEGETATION

The long-term disturbance of areas suitable for the growth of vegetation would be an unavoidable adverse impact resulting in the loss of vegetation productivity. This impact would primarily result from construction of the proposed plant site (40 acres).

WILDLIFE

Unavoidable adverse impacts of the project components on wildlife would be: 1) loss of small areas of crucial winter mule deer range (alternative condensate-NGL pipeline to Divide Junction, alternative sales gas pipeline to Kemmerer compressor station); 2) loss of small areas of big-game fawning and calving areas; 3) general disturbance of sensitive species (including mule deer and raptors), potentially resulting in reduced reproductive success; 4) disturbance of wintering mule deer during the period November 1983 - May 1984 in the area of crucial winter range located between mileposts 6.7-19.0 of the proposed temporary access road, potentially resulting in reduced reproductive success and mortality of individuals in the Wyoming Range herd unit; 5) mortality of certain species (primarily big game) resulting from increased road kills on access roads; and 6) mortality of certain species (primarily big game,

Appendix E
RECREATION

HUNTING

Hunting is one of the most popular activities within the study region. Significant big-game animals found within the western region of Wyoming are mule deer, antelope, elk, and moose. Popular big-game hunting areas include Dempsey Ridge, Bear River Divide, Fontenelle Basin, Lake Town Canyon, Big Creek, Woodruff Reservoir, and the national forests. Tables E-4 and E-5 show numbers of hunters, participation days, and harvest ratios for big game in activity areas directly affected by the proposed action. Other important wildlife generally found throughout western Wyoming are upland game and waterfowl, including blue grouse, Hungarian partridge, cottontail rabbits, red squirrels, ducks, and geese.

FISHING

Fishing opportunities are numerous within the national forests and on natural waterways in the study region. The areas that are used most extensively are the Snake and Green rivers; Fontenelle, Big Sandy, and Flaming Gorge reservoirs in Wyoming; and Bear Lake in Utah. In the immediate vicinity of Kemmerer, Viva Naughton Reservoir, Kemmerer Reservoir, and Hams Fork River (which is a blue-ribbon trout stream) offer fishing opportunities. Game fish found include brown trout, rainbow trout, cutthroat trout, whitefish, lake trout, golden trout, brook trout, **grayling,** and kokanee salmon.

BOATING AND SWIMMING

Opportunities for boating and swimming within the immediate vicinity of the proposed project are limited to Viva Naughton Reservoir. However, there are opportunities for water-based recreation within the 100-mile driving distance from potentially affected communities. Water-based recreation is generally confined to the region's major rivers, lakes, and reservoirs. Among the most frequently used water resources in the area are Flaming Gorge, Fontenelle, and Big Sandy reservoirs in Wyoming; and Willard Bay, Lost Creek Lake, Bear Lake, Hyrum Lake, East Canyon, and Rockport Lake state recreation areas in Utah. Boating and swimming opportunities are offered at all nine areas except Big Sandy Reservoir, which does not have swimming opportunities available. Float-boating (canoes, rafts, tubes, johnboats, etc.) is available on the Bear, Green, and Snake rivers.

CAMPING, PICNICKING, HIKING

Participation estimates for specific outdoor recreation activities by Wyoming residents for 1979 indicate that camping and picnicking had the largest percentage of population participation. Most camping and picnicking takes place in the cooler forested areas and near major water bodies in the region. There are approximately 3478 campsites available within the study area. Popular areas include Wasatch, Ashley, Bridger-Teton, and Caribou national forests; and all the

MITIGATING MEASURES

The applicant would undertake a number of design, construction and restoration practices to reduce potential environmental impacts. These measures are detailed in Chapter I of the DEA on pages 1-15 through 1-27. In addition, the BLM would apply several standard and special stipulations to the various ROWs needed for the proposed facilities (pages 1-39 and 1-40 of the DEA). These stipulations would be specified in the Construction, Operation, and Maintenance Plan that would be a condition of the ROW Grant.

MONITORING

In addition to the mitigating measures described in Chapter I of the DEA, the applicant and the BLM would implement several monitoring procedures in order to:

- determine if planning decisions, mitigation, and/or stipulations derived from the EA are producing desired results
- discover, document, and mitigate unanticipated and/or unpredictable effects
- communicate with affected interests

Description of monitoring procedures is provided in Chapter I of the DEA. A list of these procedures is presented below.

- During the construction phase, an on-site reclamation specialist would be designated by the applicant to direct applicable restoration practices when special conditions are encountered.
- Following implementation by the applicant of a program for reestablishment of vegetation and habitat (including wildlife habitat), the BLM would monitor the success of these

efforts until ground cover is reestablished and a determination can be made of the success of wildlife habitat restoration.

- The BLM would require the applicant to monitor all disturbed areas and perform the necessary maintenance of slopes, roads, water bars, etc.

- A water quality monitoring program would be conducted by the BLM and the applicant to identify any increases in sediment loads within affected drainages.

- If significant fossils would be affected by construction, construction monitoring by a BLM approved paleontologist may be required to recover resources for scientific interpretation.

- Construction monitoring for cultural resources would be implemented if specified in the cultural resource management plan.

- If a truck or pipeline spill should occur, monitoring procedures specified under a DEQ permit would be implemented.

- The applicant would determine potential components of a housing plan by monitoring existing conditions as the projected construction date is approached.

- The applicant would monitor local social service agencies to determine if staffing or facility shortages occur.

- The applicant would monitor School District No. 1 to identify potential staffing and/or budgetary problems that may arise from project operation-period use.

- The applicant would monitor transportation alternatives to determine if transportation mitigation measures may become necessary.

TEAM ORGANIZATION

The Road Hollow Gas Plant Project EA was prepared through the third-party contractor approach, with the BLM Kemmerer Resource Area as the lead agency. A Memorandum of Understanding (MOU) has been signed by BLM and Exxon concerning this approach. Woodward-Clyde Consultants (WCC) was selected as the contractor to prepare the EA under the direction of the BLM Kemmerer Resource Area office. The MOU clearly establishes the roles between BLM, Exxon, and WCC. The BLM EA team was headed by Mr. Steve Howard, Area Manager, assisted by Mr. Dave McIlnay. This BLM EA team provided standards and guidance to the contractor concerning the nature, content, and scope of the EA. Contractor preparers and the BLM review team members are listed in Table 4-1.

COORDINATION IN PREPARATION OF THE PROPOSED ACTION

The proposed action as presented in Chapter 1 includes pertinent information from the proposed project planning basis submitted by Exxon on September 28, 1982, in a meeting at the Kemmerer Resource Area office. The BLM review team and WCC interdisciplinary preparers reviewed this material and requested additional information needed for clarification and further detail. Exxon responded to these requests in a series of written responses, and a description of the proposed action was finalized by the contractor.

PUBLIC CONSULTATION AND COORDINATION

During the preparation of the EA, meetings were held with several agencies and private organizations in order to receive comments pertaining to the identification of issues and the scope of analysis. Agencies and organizations that were met with and a summary of issues identified included:

- October 1, 1982, meeting with Kemmerer and Lincoln County government representatives.
  Issues identified included: the need for a mancamp; increased demand for housing; encouragement for use of existing corridors; water supply; and use of local work force.
- October 5, 1982, meeting with Uinta Land and Livestock Association.
  Issues identified included: potential impacts to east-west livestock movements; potential increase in livestock road kills; increased access to the area; encouragement for proper rehabilitation and revegetation to support livestock grazing.
- October 25, 1982, meeting with Overthrust Wildlife Association.
  Issues identified included: increased access to the Bear River Divide area; limitation of new access; rehabilitation of well-field mud pits to mitigate loss of wildlife habitat; encouragement for proper rehabilitation to mitigate loss of wildlife habitat.

Table 4-1. LIST OF PREPARERS

Team Member	EA Responsibility	Education	Years Related Experience
BLM Kemmerer Resource Area Office			
Steve Howard	Area Manager and Team Leader	B.S. Forestry/ Range Management, Utah State University	15
Dave McIlnay	Co-Team Leader	B.S. Forestry/ Range Management, Colorado State University	6
Steve Cook	Water Resources	B.S. Hydrology, Utah State University	2
Dick McCuistion	Wildlife	B.S. Wildlife and Fisheries Management, Texas A&M University	7
Gary McNaughton	Geology and Minerals Paleontological Resources	B.S. Geology, Denison University	6
Harley Metz	Vegetation, Livestock/Range	M.S. Range Ecology, Colorado State University	10
Russell Storbo	Visual, Recreation, Wilderness	B.S. Park Administration, California State University, Sacramento	6
David Vlcek	Cultural Resources, Paleontological Resources	B.A. Western Illinois University	10
BLM Rock Springs District Office			
Renee Dana	District Environmental Coordinator	B.S. Range Management, University of Wyoming	9
Bruce Baker	Wildlife	Ph.D. Wildlife Ecology, Texas A&M	4

Table 4-1. LIST OF PREPARERS (continued)

Team Member	EA Responsibility	Education	Years Related Experience
Ray Christensen	Vegetation	B.S. Wildlife Management, M.S. Range Management, University of Wyoming	11
Bill McMahan	Climate, Air Quality, Noise, All Sections	B.S. Wildlife Management, Colorado State University	16
Bruce Smith	Aquatic Biology	B.S. Fish and Wildlife Management, University of Wyoming	10
Colin Voigt	Soils	B.S. Agronomy, University of Kentucky	4
John Young	Social and Economic Conditions Energy Use	B.S. Animal Science and M.S. Agricultural Systems, Colorado State University	4
Woodward-Clyde Consultants			
Janice R. Hutton	Project Manager	Ph.D. Sociology	17
Stephen D. Kellogg	Assistant Project Manager	M.S. Biology	10
Pamela Bergmann	Socioeconomic Conditions, Land Use Controls and Constraints	M.A. Geography	6
Edd Clark	Geology and Minerals	M.S. Geology	9
Marilyn Duffey-Armstrong	Visual Resources, Wilderness, Recreation, and Transportation Task Leader	M.S. Cybernetic Systems, B.A. Industrial Design	10

Table 4-1. LIST OF PREPARERS (concluded)

Team Member	EA Responsibility	Education	Years Related Experience
David Fee	Cultural Resources	M.A. Anthropology	5
Mara Feeney	Socioeconomic Conditions, and Land Use Controls and Constraints Task Leader	M.A. Planning, B.A. Anthropology	9
Perry Fontana	Air Quality Task Leader, Health and Safety	M.S. Meteorology	4
Gary Kaufman	Water Quality Task Leader	M.S. Environmental Engineering, B.S. Civil Engineering	9
Ruthann Knudson	Cultural and Paleontological Resources Task Leader	Ph.D. Anthropology	19
Scott Moorhouse	Wildlife, Aquatic Ecology, and Vegetation Task Leader	M.S. Environmental Biology, B.S. Biology	10
Roseanne Perman	Paleontology	B.A. Geology, Earth Sciences	6
Brenda Peters	Recreation and Wilderness	B.A. Sociology, Environmental Studies	2
Robert Ray	Soils, Prime Farmland, and Livestock and Range Task Leader	B.S. Natural Resources	5
Don Shute	Vegetation	M.S. Range Science	5
Mark Small	Air Quality	Ph.D. Chemistry	7
Gary Smith	Energy Use	M.S. Economic Systems	7
Don West	Geologic Hazards Task Leader	B.S. Geology	12

- November 2, 1982, meeting with Wyoming Game and Fish Department. Issues identified included: seasonal closure of Spring Creek Road to access; use of existing corridors; discouraging of new access; discouraging poaching by work force. Other potential impacts could include increased road kills, loss of wildlife habitat, increased poaching, and increased human disturbance.
- November 9, 1982, meeting with Minerals Management Service (MMS). This meeting was held to verify the scope of analysis for the MMS EA and the BLM EA. It was concluded that the MMS EA would address well-field development (drill pads and access roads) and the BLM EA would address all other project components, including gathering lines from wells to the proposed plant site.

Other federal, state, and local agencies consulted during the preparation of this EA include:

Lincoln County
- Department of Public Assistance and Social Services
- Office of Planning and Development
- Office of the Treasurer
- Sheriff's Department
- Tax Assessor's Office

Lincoln-Uinta Association of Governments

Town of Diamondville
- Town Clerk's Office
- Treasurer's Office

Town of Evanston
- Building Department
- Chamber of Commerce
- Planning Department

Town of Kemmerer
- Chamber of Commerce
- Kemmerer Volunteer Fire Department
- Mayor's Office
- Police Department

Uinta County
- Office of the Treasurer
- Planning Department

Universities
- University of Wyoming, Laramie

U.S. Department of Agriculture
- Forest Service
  - Intermountain Regional Office, Salt Lake City, Utah
  - Wasatch-Cache National Forest

- Soil Conservation Service
  - Cheyenne, Wyoming
  - Evanston, Wyoming

U.S. Department of Defense
- Army Corps of Engineers
  - Sacramento, California

U.S. Department of the Interior
- Bureau of Land Management
  - Denver Regional Office
  - Rock Springs District Office
    - Kemmerer Resource Area
  - Salt Lake City District Office
  - Wyoming State Office

- Bureau of Reclamation
  - Salt Lake City, Utah
  - Fish and Wildlife Service

- Minerals Management Service
  - Rock Springs, Wyoming

- National Park Service
  - Denver Service Center
  - Fossil Butte National Monument

U.S. Environmental Protection Agency
- Region VIII Office, Denver, Colorado

Utah State
- Division of Parks and Recreation

Wyoming State
- Department of Administration and Fiscal Control
- Department of Economic Planning and Development

Department of Environmental Conservation
Department of Environmental Quality
Employment Security Commission
Employment Service
Game and Fish Department
Geological Survey
Highway Department
Revenue and Taxation Department
State Engineer
State Historic Preservation Officer
State Lands Commission
Wyoming Association of Municipalities
Wyoming Mining Association

PUBLIC PARTICIPATION

A Notice of Scoping was published in the Federal Register on September 10, 1982, announcing the action to be analyzed in the EA; the area that would most likely be affected; preliminary issues and concerns; the scoping process to be used, with special emphasis on the scheduling of a public scoping meeting; and the location of BLM contacts for further information, submission of written comments, and availability of the public scoping documents.

The public scoping meeting announced in the Federal Register was held on November 9, 1982, at the Senior Citizens Friendship Center in Kemmerer for the purpose of identifying issues and concerns for the Road Hollow Gas Plant Project EA. Analysis of the comments received from the scoping meeting indicated that the public felt the following general issues should receive emphasis in the environmental process:

- Impacts to wildlife habitat and wildlife species
- Social and economic impacts to Lincoln and Uinta counties
- Water supply and water quality, including disposition of wastewater
- Use of common and existing corridors
- Reclamation and restoration of disturbed areas
- Health and safety related to H_2S
- Cumulative impacts (emphasis on analysis of impacts to wildlife, social, and economic resources)

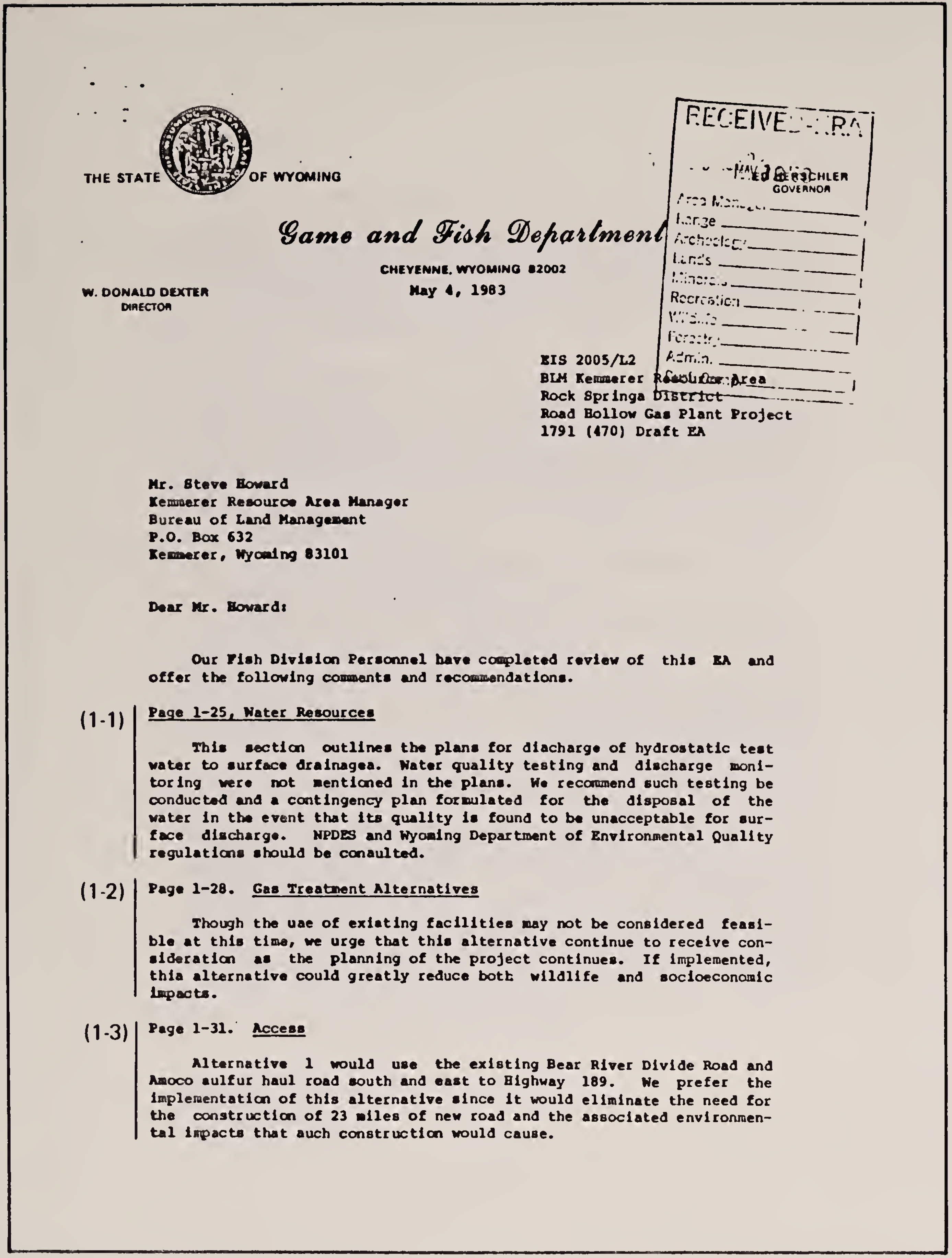
In addition to comments received at the meetings, the BLM received seven written comments from various agencies. Issues raised in the letters reflected concerns similar to those expressed at the public scoping meeting. Specific issues raised are provided in the document titled "Summary of Road Hollow Scoping Process and Conclusions."

REVIEW OF THE DRAFT ENVIRONMENTAL ASSESSMENT

The 45-day public comment period for this EA was initiated on March 21, 1983, when a notice appeared in the Federal Register, Vol. 48, No. 55. During the public comment period approximately 70 copies of the DEA were distributed by mail to various individuals, organizations, and government agencies. In addition, there were copies of the DEA and technical reports for wildlife and socioeconomics made available at BLM offices in Kemmerer and Rock Springs.

RESPONSES TO COMMENTS

During the public comment period, 14 letters from the public and agencies were received. All letters are reproduced here in their entirety. The responses are presented adjacent to the comments in each letter. Responses have been made to all substantive comments presented in the letters. Substantive comments were considered to be those which addressed either the adequacy of the DEA or the merits of alternatives or both.



THE STATE OF WYOMING

ED HERSCHLER
GOVERNOR

Game and Fish Department

CHEYENNE, WYOMING 82002

W. DONALD DEXTER
DIRECTOR

RECEIVED-KRA
MAY 1983
Area Manager
Range
Archeology
Lands
Minerals
Recreation
Wildlife
Forestry
Admin.

May 4, 1983

EIS 2005/L2
BLM Kemmerer Resource Area
Rock Springs District
Road Hollow Gas Plant Project
1791 (470) Draft EA

Mr. Steve Howard
Kemmerer Resource Area Manager
Bureau of Land Management
P.O. Box 632
Kemmerer, Wyoming 83101

Dear Mr. Howard:

Our Fish Division Personnel have completed review of this EA and offer the following comments and recommendations.

(1-1) Page 1-25, Water Resources

This section outlines the plans for discharge of hydrostatic test water to surface drainages. Water quality testing and discharge monitoring were not mentioned in the plans. We recommend such testing be conducted and a contingency plan formulated for the disposal of the water in the event that its quality is found to be unacceptable for surface discharge. NPDES and Wyoming Department of Environmental Quality regulations should be consulted.

(1-2) Page 1-28. Gas Treatment Alternatives

Though the use of existing facilities may not be considered feasible at this time, we urge that this alternative continue to receive consideration as the planning of the project continues. If implemented, this alternative could greatly reduce both wildlife and socioeconomic impacts.

(1-3) Page 1-31. Access

Alternative 1 would use the existing Bear River Divide Road and Amoco sulfur haul road south and east to Highway 189. We prefer the implementation of this alternative since it would eliminate the need for the construction of 23 miles of new road and the associated environmental impacts that such construction would cause.

(1-1) The applicant committed practices described on page 1-35 under Water Resources (particularly number 4) are considered by the BLM to constitute an adequate contingency plan.

NPDES/Wyoming Department of Environmental Quality requirements for a permit to discharge are discussed under Authorizing Actions on page 1-34.

(1-2) Since the DEA was prepared, the applicant has proposed an interim gas processing alternative which would utilize existing facilities to process sour gas from the Road Hollow Unit. In response to a ROW grant application submitted to the BLM, an analysis for this alternative has been added to the FEA under the section called Changes to the Text of the Draft EA.

(1-3) Based on a review of the analysis presented in the DEA, the BLM has selected Alternative 1 as the Preferred Alternative for plant site access. The Record of Decision included in the FEA reflects this preference.

Mr. Steve Howard
May 4, 1983
EIS 2005/L2, Page 2

(1-4) Page 2-22. Aquatic Ecology, Proposed Action

The last paragraph of this section acknowledges the occurrence within the project area of the Colorado River cutthroat trout, the Bonneville cutthroat trout and the bluehead sucker, all of which have been listed as rare by the Wyoming Game and Fish Department. Another species which occurs within the project area and should be given consideration during impact analysis is the leatherside chub. This species is listed as "uncommon" by the Wyoming Game and Fish Department, with further designations as a "species of high interest", with declining populations and/or habitat conditions (Current Status and Inventory of Wildlife in Wyoming, Wyoming Game and Fish Department, 1977).

(1-5) Page 2-22. Aquatic Ecology, Alternatives

This page states that no game fish species have been recorded in Twin Creek in the project site area. Historically, there have been game fish in Twin Creek. Although habitat degradation has caused their decline and possibly extirpation, there may still be remnant game fish populations. There are game fish in Rock Creek, upstream of Twin Creek, and during times of the year when habitat conditions are favorable, these fish may drift into Twin Creek.

The presence of the leatherside chub, a species of high interest, in Twin Creek should also be noted.

(1-6) Page 3-6, Figure 3-1. Predicted Annual SO_2 Concentration

Though the SO_2 emissions from the Road Hollow Plant would not result in significant impacts to air quality, we feel that the cumulative impacts of other gas sweetening plants and coal fired power plants in the area should be investigated. When looked at as a whole, the contribution that the Road Hollow Plant has to SO_2 concentrations and potential associated acid precipitation problems could be significant. Assessment of potential acid precipitation contributions of each proposed development prior to construction is necessary to avoid problems in segregating impacts of various industries, such as is presently being experienced in the eastern United States.

(1-7) Page 3-26. Recreational Resources

The document considers short-term recreational impacts, lasting less than two visitor seasons, as insignificant. We do not agree with this significance criteria and feel that severe impacts of a two season duration would represent significant loss to available recreational opportunity.

Page 3-27. Cumulative Impacts

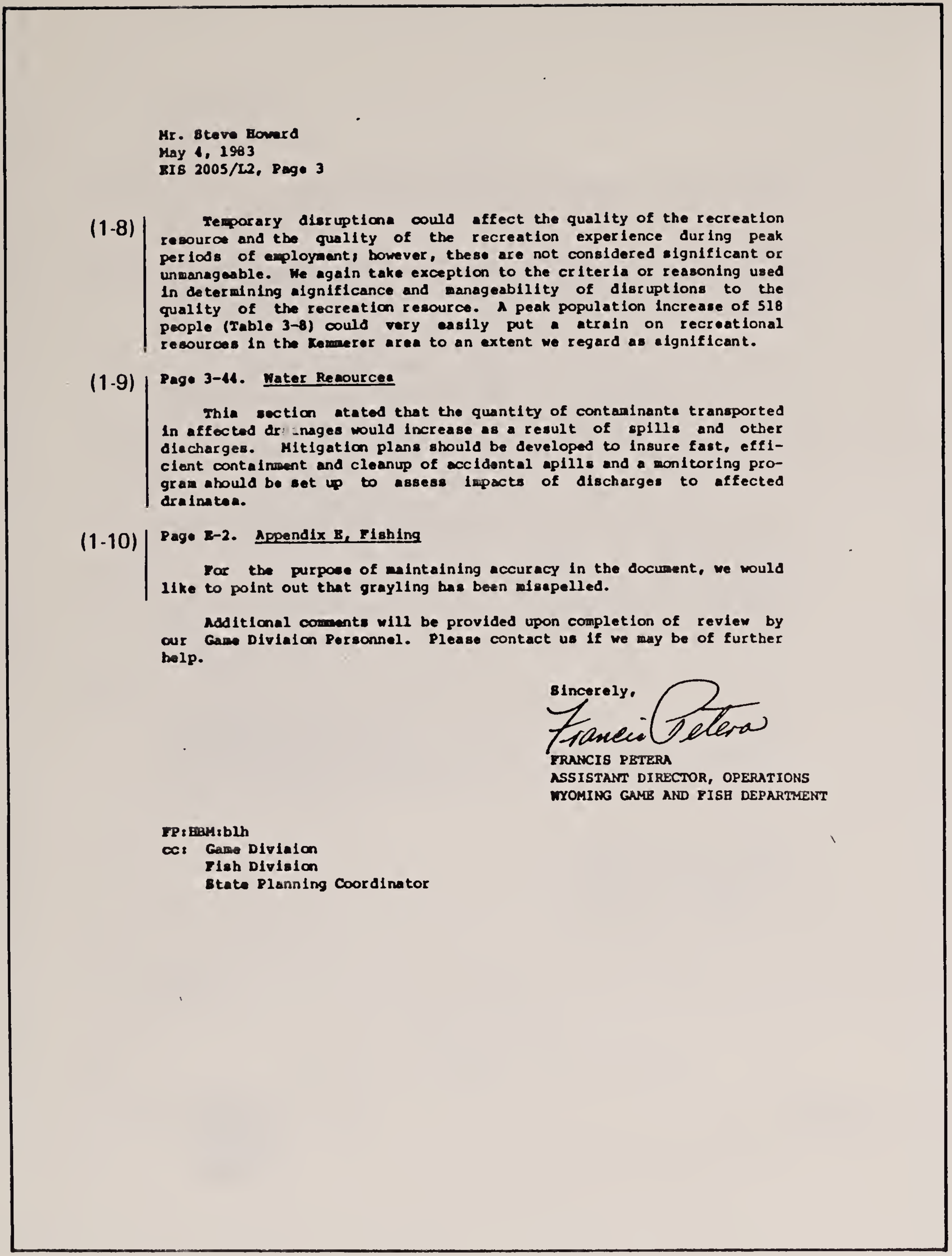
(1-4) The DEA has been changed on page 2-23, second column, first partial paragraph, last sentence.

(1-5) The DEA has been changed on page 2-22, second column, second full paragraph, last sentence.

(1-6) The DEA has been changed on page 3-4, first column, Cumulative Impacts.

(1-7) The BLM considers the indicator of significance for recreational resources to be reasonable based on the following points:

- hunting is the primary recreation in the area and other concentrated recreation does not constitute a significant resource.
- increased hunting pressure during the relatively short construction period is not likely to affect big game or other game populations significantly.
- due to the short construction period it is expected that other concentrated recreation would return to present levels rapidly.



Mr. Steve Howard
May 4, 1983
EIS 2005/L2, Page 3

(1-8) Temporary disruptions could affect the quality of the recreation resource and the quality of the recreation experience during peak periods of employment; however, these are not considered significant or unmanageable. We again take exception to the criteria or reasoning used in determining significance and manageability of disruptions to the quality of the recreation resource. A peak population increase of 518 people (Table 3-8) could very easily put a strain on recreational resources in the Kemmerer area to an extent we regard as significant.

(1-9) Page 3-44. Water Resources

This section stated that the quantity of contaminants transported in affected drainages would increase as a result of spills and other discharges. Mitigation plans should be developed to insure fast, efficient containment and cleanup of accidental spills and a monitoring program should be set up to assess impacts of discharges to affected drainages.

(1-10) Page E-2. Appendix E, Fishing

For the purpose of maintaining accuracy in the document, we would like to point out that grayling has been misspelled.

Additional comments will be provided upon completion of review by our Game Division Personnel. Please contact us if we may be of further help.

Sincerely,

Francis Petera

FRANCIS PETERA
ASSISTANT DIRECTOR, OPERATIONS
WYOMING GAME AND FISH DEPARTMENT

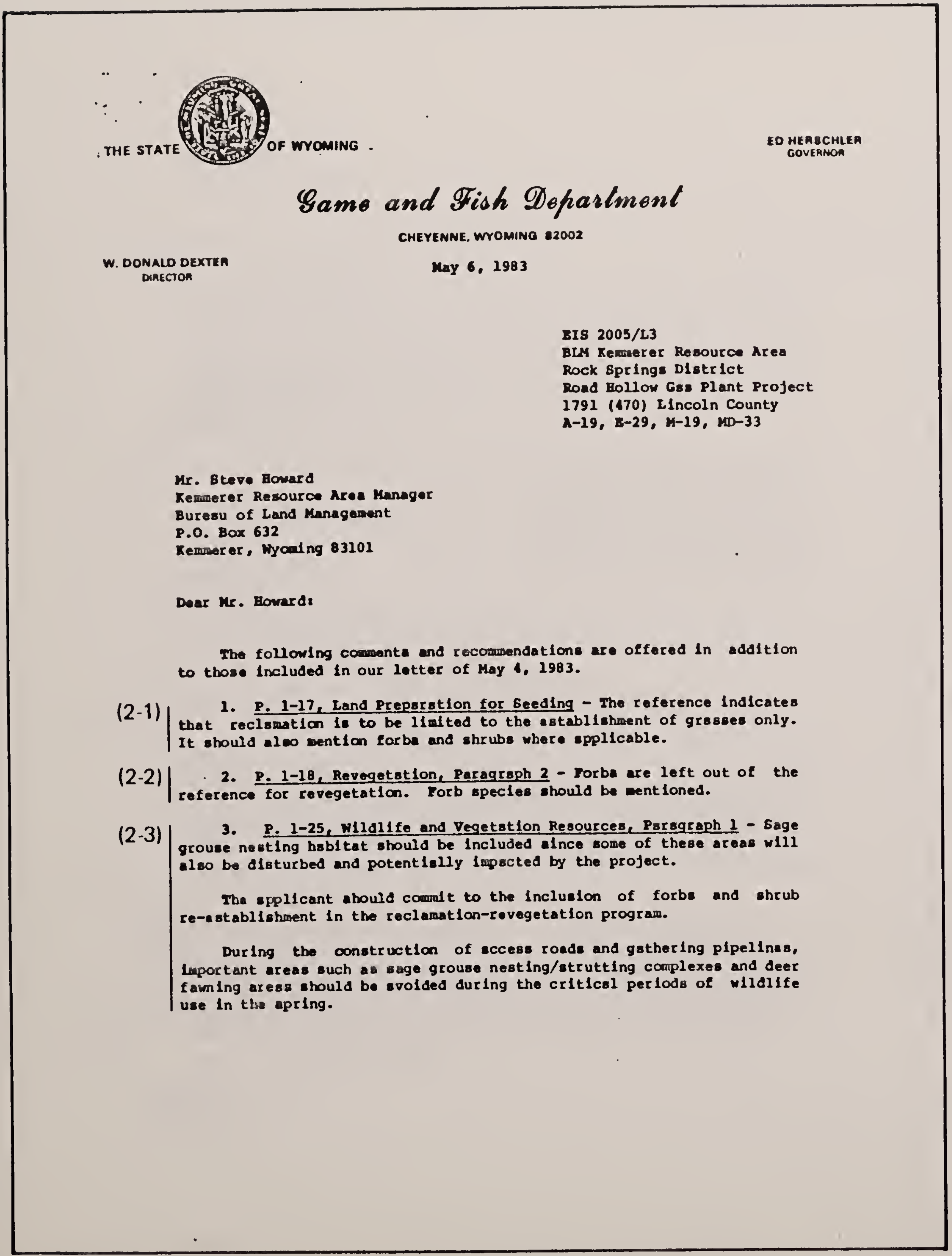
FP:HBM:blh
cc: Game Division
Fish Division
State Planning Coordinator

(1-8) The BLM's findings indicate that there are sufficient resources in the geographic area of influence to accommodate peak demands by the projected construction work force without incurring significant impacts.

(1-9) The DEA has been changed on page 3-44, second column, second full paragraph.

(1-10) Before a ROW grant could be issued, a Plan of Operations would be developed. In this Plan of Operations the BLM would require that the Applicant would notify the DEQ immediately after any accidental spills. It would then be the responsibility of the DEQ to specify appropriate mitigation and monitoring procedures based on spill specifics.

The misspelling on DEA page E-2 has been changed.



THE STATE OF WYOMING
ED HERSCHLER
GOVERNOR

Game and Fish Department

CHEYENNE, WYOMING 82002

W. DONALD DEXTER
DIRECTOR

May 6, 1983

EIS 2005/L3
BLM Kemmerer Resource Area
Rock Springs District
Road Hollow Gas Plant Project
1791 (470) Lincoln County
A-19, E-29, M-19, MD-33

Mr. Steve Howard
Kemmerer Resource Area Manager
Bureau of Land Management
P.O. Box 632
Kemmerer, Wyoming 83101

Dear Mr. Howard:

The following comments and recommendations are offered in addition to those included in our letter of May 4, 1983.

(2-1) 1. P. 1-17, Land Preparation for Seeding - The reference indicates that reclamation is to be limited to the establishment of grasses only. It should also mention forbs and shrubs where applicable.

(2-2) 2. P. 1-18, Revegetation, Paragraph 2 - Forbs are left out of the reference for revegetation. Forb species should be mentioned.

(2-3) 3. P. 1-25, Wildlife and Vegetation Resources, Paragraph 1 - Sage grouse nesting habitat should be included since some of these areas will also be disturbed and potentially impacted by the project.

The applicant should commit to the inclusion of forbs and shrub re-establishment in the reclamation-revegetation program.

During the construction of access roads and gathering pipelines, important areas such as sage grouse nesting/strutting complexes and deer fawning areas should be avoided during the critical periods of wildlife use in the spring.

(2-1) The DEA has been changed on page 1-17, second column, first full paragraph.

(2-2) The DEA has been changed on page 1-18, first column, second full paragraph.

(2-3) The DEA has been changed on page 1-25, first column, last paragraph, and second column, first partial paragraph. The applicant has committed to attempting shrub and forb establishment (page 1-25). Monitoring by the Wyoming Game and Fish and BLM would determine if these efforts are successful. If they are not, the applicant remains committed to establishment of vegetation acceptable to BLM normal standards.

Standard and special stipulations (pages 1-39 and 1-40) would be applied to any ROWs Grants. These stipulations include protection of sensitive wildlife areas during critical use periods.

Mr. Steve Howard
May 6, 1983
EIS 2005/L3, Page 2

(2-4) 4. P. 1-32, Mitigation Alternative, Paragraph 1 - Fencing should also allow access at points for any roads that serve a legitimate function for area recreation and hunting access.

(2-5) 5. P. 3-11, Soils: Reclamation Potential - Re-establishment of grass species may be possible in 3-5 years, as noted. However, as we have indicated above, forbs and shrubs should be re-established as well, and we doubt that these species can be established in this time frame. The effects on soil stability should be addressed.

(2-6) 6. Mitigation Alternative for Fencing - This section indicates that fencing will protect reclaimed right-of-ways from wildlife use. This fence should permit access by wildlife, not prohibit it.

(2-7) 7. P. 3-20, Livestock and Range: Proposed Action - The possibility for increasing wildlife-livestock forage competition by this action should be addressed.

(2-8) 8. P. 3-22, Mitigation Alternative - There is also no mention here of the AUM loss due to the fencing of the 20-mile right-of-way and possible consequence to grazing patterns.

(2-9) 9. P. 3-19, Mitigation Alternative for Fencing - The potential for increased wildlife-auto collisions should be addressed. It is possible that establishment of lush vegetation, and exclusion of livestock use within the right-of-way could lure wildlife into the right-of-way, increasing this potential. A "no fencing" alternative should be addressed.

(2-10) It appears that all reasonable measures are being taken to minimize the impacts for wildlife in the area. However, we must emphasize our preference for any alternatives that minimize the creation of increased access, (such as proposed new haul road) and habitat disturbance. We also discourage the Fencing-Mitigation Alternative. Although the heavy road traffic would occur only during the 4 years of construction, the fence would be permanent.

(2-4) The DEA has been changed on page 1-32, second column, first full paragraph.

(2-5) The DEA has been changed on page 3-11, first column, first partial paragraph.

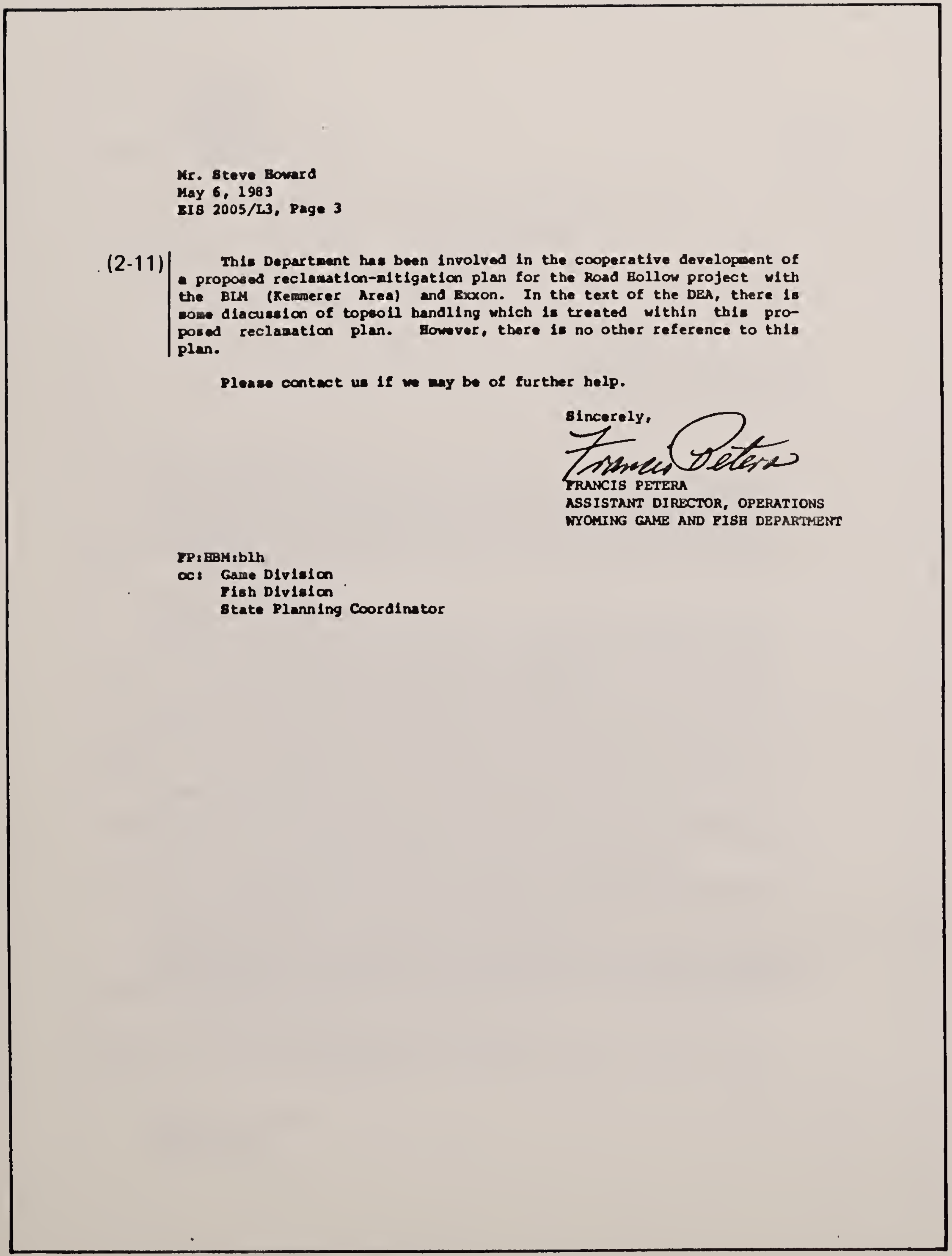
(2-6) The DEA has been changed on page 3-11, first column, last paragraph.

(2-7) The DEA has been changed on page 3-20. Add paragraph following first full paragraph, second column.

(2-8) AUM loss due to fencing and impacts to grazing patterns are discussed on page 3-22, second column, first full paragraph.

(2-9) The DEA has been changed on page 3-19, following the second full paragraph, first column. The "no fencing alternative" is the proposed action having thereby been assessed at the same level of detail as the "fencing alternative."

(2-10) Please refer to the response for 1-3.



Mr. Steve Boward
May 6, 1983
EIS 2005/L3, Page 3

(2-11) This Department has been involved in the cooperative development of a proposed reclamation-mitigation plan for the Road Hollow project with the BLM (Kemmerer Area) and Exxon. In the text of the DEA, there is some discussion of topsoil handling which is treated within this proposed reclamation plan. However, there is no other reference to this plan.

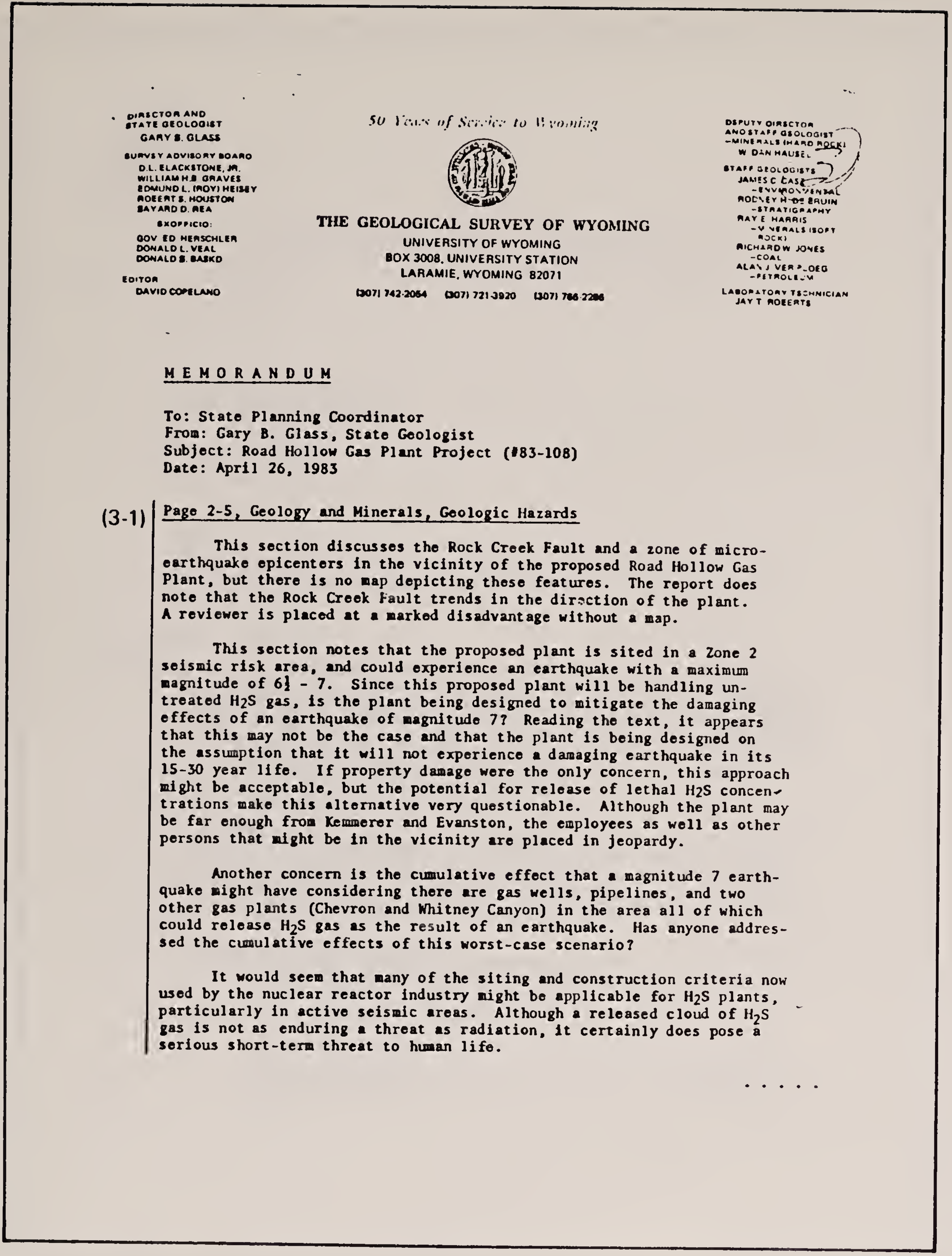
Please contact us if we may be of further help.

Sincerely,

Francis Petera
FRANCIS PETERA
ASSISTANT DIRECTOR, OPERATIONS
WYOMING GAME AND FISH DEPARTMENT

FP:HBM:blh
cc: Game Division
Fish Division
State Planning Coordinator

(2-11) Soil handling techniques referenced in the DEA are standard BLM requirements. The plan under cooperative development to which your comment refers is discussed on DEA page 3-43.



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JAY T. ROBERTS

MEMORANDUM

To: State Planning Coordinator
From: Gary B. Glass, State Geologist
Subject: Road Hollow Gas Plant Project (#83-108)
Date: April 26, 1983

(3-1) Page 2-5, Geology and Minerals, Geologic Hazards

This section discusses the Rock Creek Fault and a zone of microearthquake epicenters in the vicinity of the proposed Road Hollow Gas Plant, but there is no map depicting these features. The report does note that the Rock Creek Fault trends in the direction of the plant. A reviewer is placed at a marked disadvantage without a map.

This section notes that the proposed plant is sited in a Zone 2 seismic risk area, and could experience an earthquake with a maximum magnitude of 6½ - 7. Since this proposed plant will be handling untreated H_2S gas, is the plant being designed to mitigate the damaging effects of an earthquake of magnitude 7? Reading the text, it appears that this may not be the case and that the plant is being designed on the assumption that it will not experience a damaging earthquake in its 15-30 year life. If property damage were the only concern, this approach might be acceptable, but the potential for release of lethal H_2S concentrations make this alternative very questionable. Although the plant may be far enough from Kemmerer and Evanston, the employees as well as other persons that might be in the vicinity are placed in jeopardy.

Another concern is the cumulative effect that a magnitude 7 earthquake might have considering there are gas wells, pipelines, and two other gas plants (Chevron and Whitney Canyon) in the area all of which could release H_2S gas as the result of an earthquake. Has anyone addressed the cumulative effects of this worst-case scenario?

It would seem that many of the siting and construction criteria now used by the nuclear reactor industry might be applicable for H_2S plants, particularly in active seismic areas. Although a released cloud of H_2S gas is not as enduring a threat as radiation, it certainly does pose a serious short-term threat to human life.

. . . . .

(3-1) The DEA has been changed to include a map of the Rock Creek fault and zone of microearthquake epicenters following page 2-6. This map was drafted for an earlier file report that is part of the Road Hollow project file in the BLM Kemmerer Resource Area Office. Additional reference material and background information is available in the report.

Additional discussion has been included in the FEA regarding potential health and safety impacts resulting from release of H_2S (refer to comment and response 4-18). In addition, please refer to page 1-23 of the DEA for H_2S emergency and contingency plans to be implemented by the applicant.

The cumulative effects of an earthquake causing simultaneous damage and potential release of H_2S at all three gas processing facilities (Road Hollow, Chevron Carter Creek, and Amoco Whitney Canyon) were not analyzed by a quantitative method. However, in the unlikely event of such a worst-case scenario, there would be potential for interactive effects of H_2S that could result in larger magnitude impacts than expected if only direct impacts from Road Hollow were considered.

The basis for design of the plant facilities, ANSI standard A58.1 (specifically A9.4) contain the architectural standards for this facility in a Seismic Risk Zone 2. This standard by definition incorporates earthquake event probabilities in setting conservative design criteria. These standards currently predict that the reoccurrence interval of earthquakes of a magnitude in excess of Zone 2 criteria is about 475 years anywhere in the zone. The applicant is committed to constructing the facility to the nationally accepted standards for a Seismic Risk Zone 2.

State Planning Coordinator

April 26, 1983
Page 2

(3-2) Page 2-6, Paleontologic Resources

We agree with the EIS's assessments on paleontological resources. From the standpoint of paleontology resources, Sales Gas Pipeline Alternative 2 should be avoided.

(3-3) Map G-1 is in error in T.21 N., R.117-118 W., in that SE¼, section 13, T.21 N., R.118 W., and portions of sections 17 and 18, T.21 N., R. 117 W. are state-owned lands (received in exchange for some lands in Fossil Butte National Monument). See attached map. We note this error because the State of Wyoming acquired these lands for their paleontologic resources.

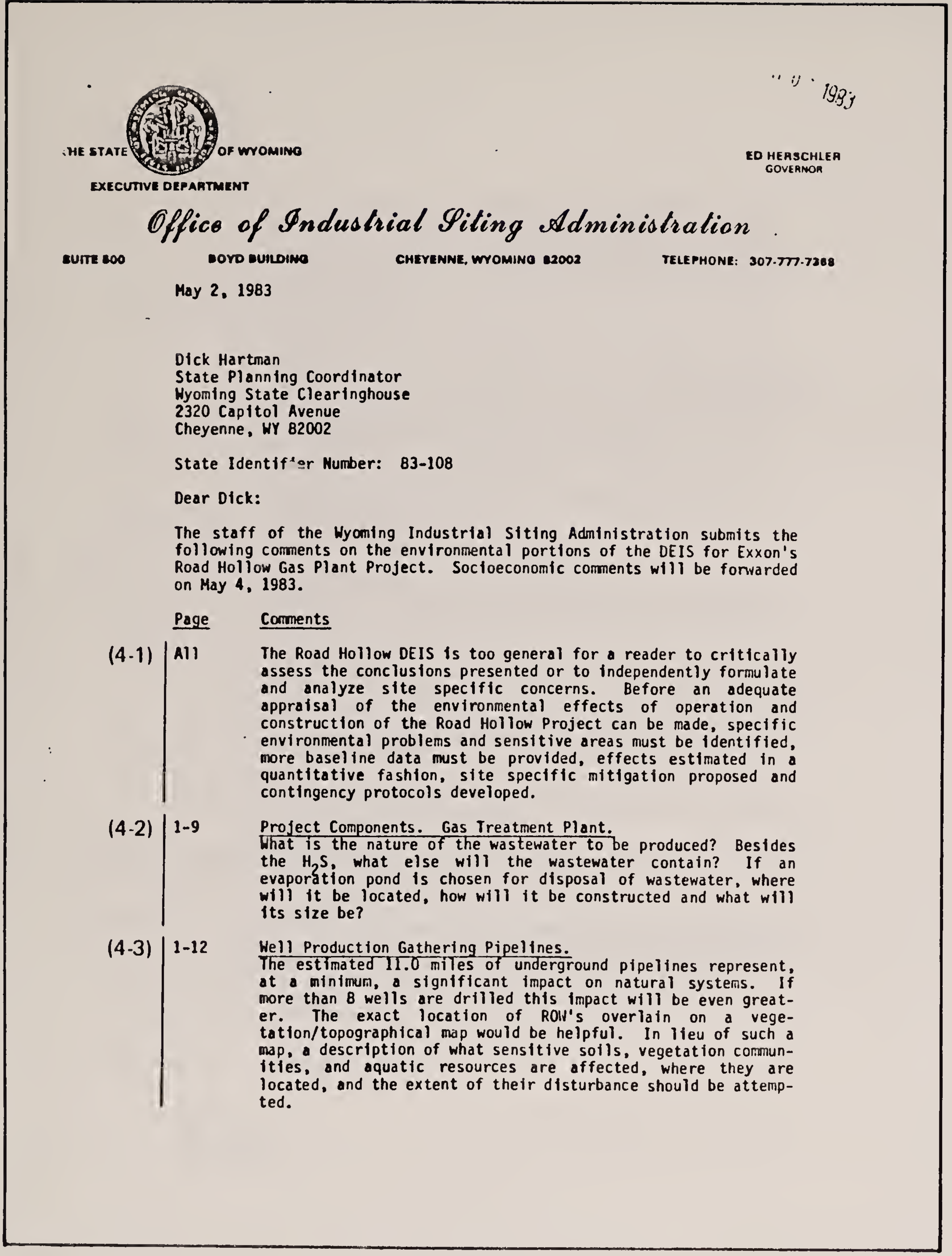
(3-4) Proposed Eastern Access and Sulfur Haul Road

The easternmost portion of this haul road is passing through a coal mining area. Sections 34 and 35, T.20 N., R.117 W., in particular, could be undermined and subject to mine subsidence. Although there are no maps of any underground mines beneath the proposed right-of-way, this does not preclude their existence since there are many old mines for which there are no maps or records.

(3-2) This comment has been considered as part of the BLM's decision-making process.

(3-3) The BLM has notified the mapping division in Cheyenne to correct this land status change.

(3-4) In response to this comment, a knowledgeable staff involved with the FMC Skullpoint mine has been questioned about potential underground mines in the area referred to. They have replied that there are no underground mines in the area of interest.



1983

THE STATE OF WYOMING
EXECUTIVE DEPARTMENT

ED HERSCHLER
GOVERNOR

Office of Industrial Siting Administration

SUITE 500 BOYD BUILDING CHEYENNE, WYOMING 82002 TELEPHONE: 307-777-7368

May 2, 1983

Dick Hartman
State Planning Coordinator
Wyoming State Clearinghouse
2320 Capitol Avenue
Cheyenne, WY 82002

State Identifier Number: 83-108

Dear Dick:

The staff of the Wyoming Industrial Siting Administration submits the following comments on the environmental portions of the DEIS for Exxon's Road Hollow Gas Plant Project. Socioeconomic comments will be forwarded on May 4, 1983.

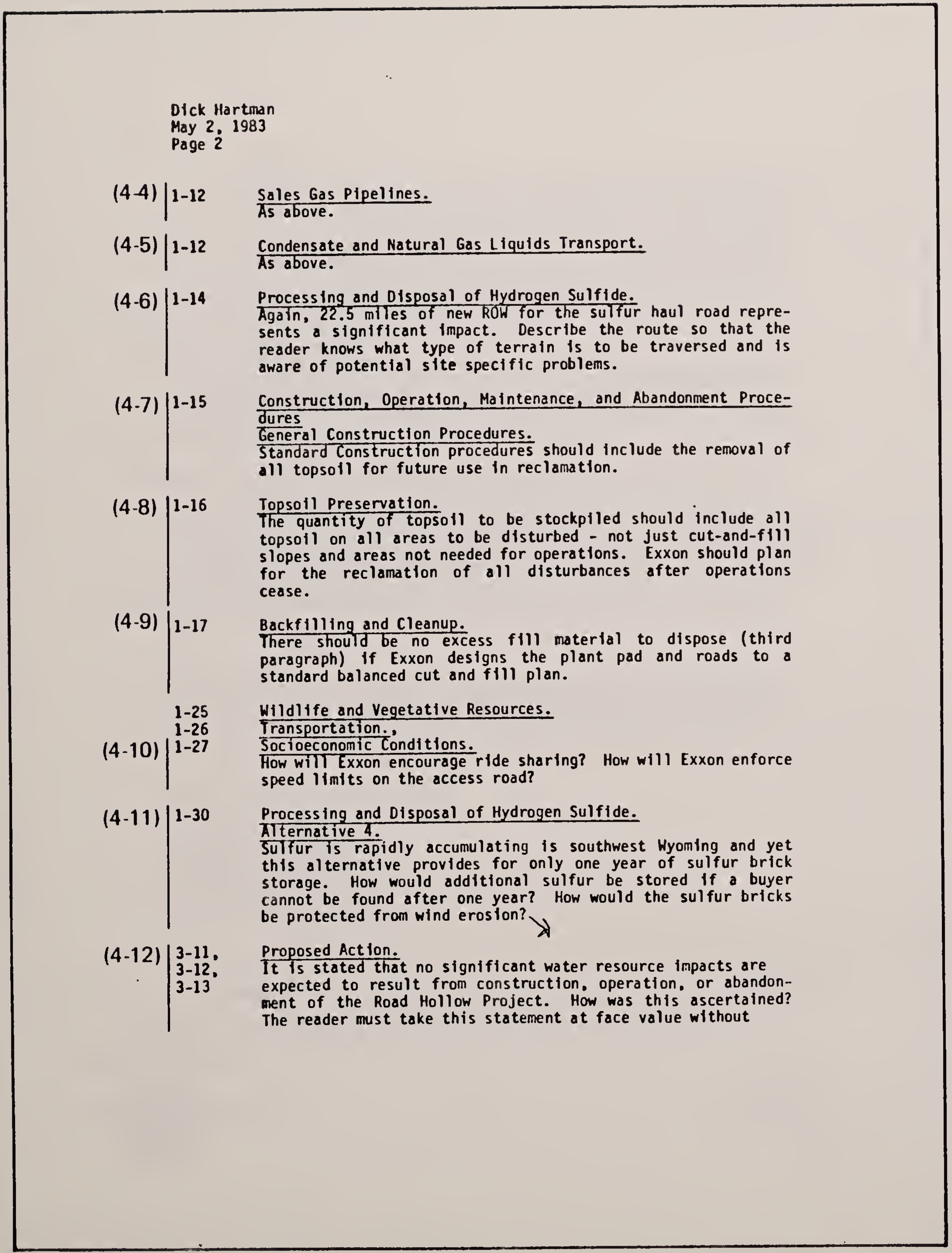
	Page	Comments
(4-1)	All	The Road Hollow DEIS is too general for a reader to critically assess the conclusions presented or to independently formulate and analyze site specific concerns. Before an adequate appraisal of the environmental effects of operation and construction of the Road Hollow Project can be made, specific environmental problems and sensitive areas must be identified, more baseline data must be provided, effects estimated in a quantitative fashion, site specific mitigation proposed and contingency protocols developed.
(4-2)	1-9	Project Components. Gas Treatment Plant. What is the nature of the wastewater to be produced? Besides the H_2S, what else will the wastewater contain? If an evaporation pond is chosen for disposal of wastewater, where will it be located, how will it be constructed and what will its size be?
(4-3)	1-12	Well Production Gathering Pipelines. The estimated 11.0 miles of underground pipelines represent, at a minimum, a significant impact on natural systems. If more than 8 wells are drilled this impact will be even greater. The exact location of ROW's overlain on a vegetation/topographical map would be helpful. In lieu of such a map, a description of what sensitive soils, vegetation communities, and aquatic resources are affected, where they are located, and the extent of their disturbance should be attempted.

(4-1) General comment noted; please review the responses provided below.

(4-2) Wastewater disposal to an evaporation pond would require a permit from the Wyoming DEQ Water Quality Division and The State Engineer's Office. Wastewater would be tested prior to the granting of that permit. Design and location of the pond would also meet the standards of and be permitted through DEQ and the Office of the State Engineer. See the Authorizing Actions section of the DEA (page 1-34) for more detailed description of these permits.

(4-3) A description of resources and potential impacts for soils, vegetation communities and aquatic biology associated with the proposed ROW for well-field gathering lines are presented in Chapters 2 and 3 of the DEA. Specifically:

- soils - pages C-2 through C-3 (Appendix C) and 3-10
- vegetation - pages 2-15 and 3-15
- aquatic resources - pages 2-23 and 3-19.



Dick Hartman
May 2, 1983
Page 2

(4-4) 1-12 Sales Gas Pipelines.
As above.

(4-5) 1-12 Condensate and Natural Gas Liquids Transport.
As above.

(4-6) 1-14 Processing and Disposal of Hydrogen Sulfide.
Again, 22.5 miles of new ROW for the sulfur haul road represents a significant impact. Describe the route so that the reader knows what type of terrain is to be traversed and is aware of potential site specific problems.

(4-7) 1-15 Construction, Operation, Maintenance, and Abandonment Procedures
General Construction Procedures.
Standard Construction procedures should include the removal of all topsoil for future use in reclamation.

(4-8) 1-16 Topsoil Preservation.
The quantity of topsoil to be stockpiled should include all topsoil on all areas to be disturbed - not just cut-and-fill slopes and areas not needed for operations. Exxon should plan for the reclamation of all disturbances after operations cease.

(4-9) 1-17 Backfilling and Cleanup.
There should be no excess fill material to dispose (third paragraph) if Exxon designs the plant pad and roads to a standard balanced cut and fill plan.

1-25 Wildlife and Vegetative Resources.
1-26 Transportation.,
(4-10) 1-27 Socioeconomic Conditions.
How will Exxon encourage ride sharing? How will Exxon enforce speed limits on the access road?

(4-11) 1-30 Processing and Disposal of Hydrogen Sulfide.
Alternative 4.
Sulfur is rapidly accumulating is southwest Wyoming and yet this alternative provides for only one year of sulfur brick storage. How would additional sulfur be stored if a buyer cannot be found after one year? How would the sulfur bricks be protected from wind erosion?

(4-12) 3-11, 3-12, 3-13 Proposed Action.
It is stated that no significant water resource impacts are expected to result from construction, operation, or abandonment of the Road Hollow Project. How was this ascertained? The reader must take this statement at face value without

(4-4)
(4-5) It is BLM policy to examine every project on the ground, to determine if additional environmental analysis is necessary, prior to allowing construction to proceed. Therefore, the areas of your concern (including areas that could be affected by more than the eight presently described wells) would be considered on a site-specific basis before initiation of construction activities would be allowed.

Detailed discussion of the affected environment and potential impacts for sales gas, condensate, and natural gas liquids transport are discussed in Chapters 2 and 3 and Appendices. Refer to comment 4-3 for page numbers.

(4-6) Site specific resource values and potential impacts for the proposed sulfur haul road are discussed throughout Chapters 2 and 3, and Appendices. For example please refer to pages: 2-12, 2-13, 2-15, 2-18, 2-26, 2-30, 2-33, 2-34, 3-8, 3-15, 3-21, and Appendices C, D, E, and F.

(4-7) This comment is addressed on DEA page 1-16, second column, under Topsoil Preservation.

(4-8) Refer to page 1-16, second column, first sentence under Topsoil Preservation. All other BLM standard requirements would be addressed and committed to in the Plan of Operation, including the topics mentioned in this comment.

(4-9) Yes, excess fill material would be limited.

(4-10) Ride sharing would be encouraged through construction contractors. Speed limits would be enforced by local law enforcement officials at the request of Exxon.

(4-11) If a buyer cannot be found after one year, a second storage area with the same dimensions and capacity as the first would be constructed within the 40-acre plant site.
Sulfur bricks would be protected from wind erosion, if necessary, by some form of cover or other surface protection.

(4-12) No significant water resource impacts are expected based on the indicators of impact significance given on page 3-11 and the applicant committed practices outlined in Chapter 1.

A composite index for evaluating relative water quality and quantity impacts involving ground disturbance is explained in Appendix F. Results are presented in Table 1-3. This index was derived to aid in the comparison of alternatives and provide a measure of the quantification that this comment refers to.

(4-12) benefit from quantitative estimates of the magnitude of impact and how these estimates were arrived at. This whole section is filled with qualitative assumptions when a quantitative discussion could have been presented from either "best guess" estimates or available models. Wording such as "temporary increases in suspended solids", "increases in downstream sedimentation", "these increases would be small", "a factor reducing downstream effects", "somewhat greater effects", etc. are meaningless. What kinds of materials are likely to find their way into drainages in the event of spills? What are the chemical characteristics of these materials? What is the spill prevention control plan and how effective will it be in keeping toxic and other damaging materials out of the Bear River and Little Muddy Creek? What solid wastes are expected to be produced and in what quantities by the facility? If an on-site solid waste disposal facility is planned, where will it be located? What will its size be? How will it be constructed? Where is the discharge point from the wastewater treatment facility? What quantity of wastewater will be released and what will its chemical characteristics be?

(4-13) 3-17 Wildlife. Indicators of Impact Significance.
This section should include criteria for estimating impacts on nesting raptors. Many raptor nests, according to Table 2-7, are within 1 mile of proposed linear facilities. Coordination with the U.S. Fish and Wildlife Services on timing of construction and ROW routing should be committed to. This is also true of sage grouse strutting areas. The purpose of this coordination would be to prevent unnecessary human disturbance of birds during mating and nesting. For most rights-of-way appropriate timing of construction would effectively mitigate this concern. For the sulfur haul road and other access roads where potential impacts may be realized during the entire life of the project, slight alternations in routing, as well as appropriate timing of construction, may mitigate these concerns.

(4-14) 3-18 Operation, Maintenance, and Abandonment.
This paragraph is too generic. It tells the reader nothing other than what he has probably surmised himself.

(4-15) 3-18 Cumulative Impact.
Other facilities in the region of impact should be mentioned and cumulative impacts on wildlife quantitatively estimated. This section, as presently stated, indicates only that cumulative impacts may occur and as such is totally uninformative. No attempt has been made to quantitate or estimate the magnitude of these impacts.

(4-12) Materials and chemical characteristics that could be introduced from spills are discussed in the DEA on page 3-12, second column, second full paragraph, lines 10-13.,

Issues such as a spill prevention and control plan would be detailed in the applicant's Operation and Safety Manual (page 1-23) and Plan of Operations (page 1-25). The effectiveness of this type of program is expected to be similar to other spill prevention programs designed for similar facilities.

Solid wastes generated would be collected and transferred to an approved sanitary landfill or other solid water disposal site approved by DEQ. No on-site solid waste disposal facility is planned (page 1-9). Since any solid waste disposed site would be approved by DEQ, these issues would be the subject of the DEQ permit. Sewage facilities are discussed on page 1-12.

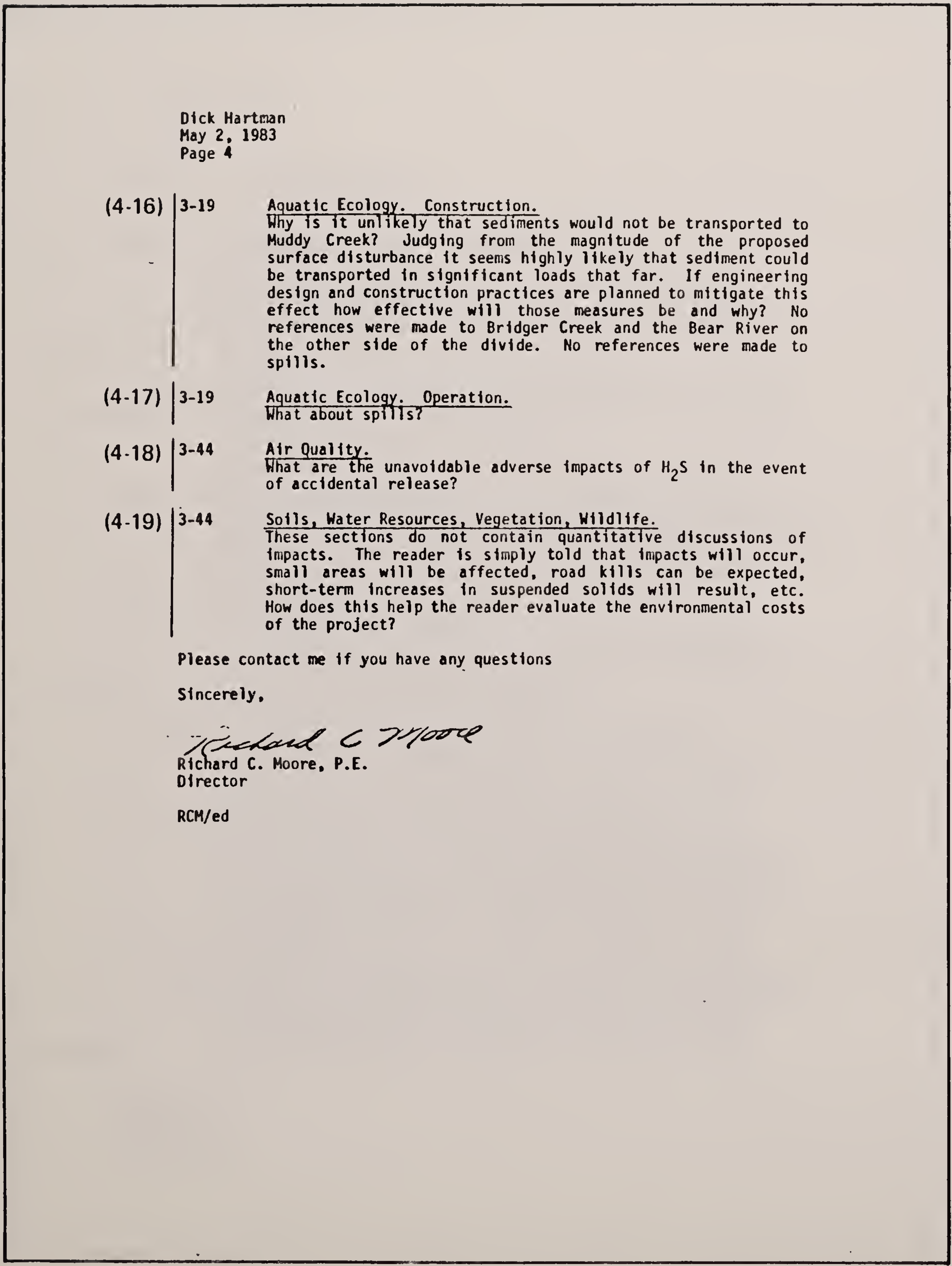
The quantity of wastewater to be released is 98 acre-feet per year (page 1-9). The discharge point would be specified in an application for a DEQ permit. The proposed action is sub-surface injection. Chemical characteristics of wastewater and other details would also be addressed in the DEQ permitting process.

(4-13) No significant impacts would occur to nesting raptors or sage grouse strutting areas because of construction avoidance dates, and or areas where proposed or alternative facilities would be relocated (pages 3-18 and 1-39). Construction avoidance dates and relocation areas are both provided for in standard and special BLM stipulations (pages 1-39 and 1-40) which are considered part of the proposed action for the EA. These stipulations would be included in the Construction, Operation, and Maintenance Plan and would be a condition of the ROW Grant (page 1-39).

(4-14) The level of detail provided in this paragraph is consistent with the level of significance of anticipated impacts which are expected to be minor.

(4-15) Wildlife cumulative impacts were evaluated by considering the impacts of the project in combination with interactive impacts of other projects in the geographic area of influence described in Chapter 1 and Appendix A (page 3-17).

Cumulative impact significance was determined by comparing the magnitude of combined impacts with the indicators of significance, given on page 3-17.



Dick Hartman
May 2, 1983
Page 4

(4-16) 3-19 Aquatic Ecology. Construction.
Why is it unlikely that sediments would not be transported to Muddy Creek? Judging from the magnitude of the proposed surface disturbance it seems highly likely that sediment could be transported in significant loads that far. If engineering design and construction practices are planned to mitigate this effect how effective will those measures be and why? No references were made to Bridger Creek and the Bear River on the other side of the divide. No references were made to spills.

(4-17) 3-19 Aquatic Ecology. Operation.
What about spills?

(4-18) 3-44 Air Quality.
What are the unavoidable adverse impacts of H_2S in the event of accidental release?

(4-19) 3-44 Soils, Water Resources, Vegetation, Wildlife.
These sections do not contain quantitative discussions of impacts. The reader is simply told that impacts will occur, small areas will be affected, road kills can be expected, short-term increases in suspended solids will result, etc. How does this help the reader evaluate the environmental costs of the project?

Please contact me if you have any questions

Sincerely,

Richard C Moore
Richard C. Moore, P.E.
Director

RCM/ed

(4-16) It is unlikely that sediments would be transported to Muddy Creek because: 1) most disturbed areas would be located along drainage divides and would allow sediment to be trapped between the drainage area and drainage channel (page 3-12); 2) generally low rainfall and surface runoff (page 3-12); and 3) erosion control and revegetation applicant committed practices detailed on page 1-25.

The effectiveness of measures specified in Chapter 1 to reduce sedimentation and downstream water quality impacts are expected to be sufficient to prevent significant impacts, i.e., no DEQ water quality standards would be exceeded. This judgement is based upon BLM experience with similar projects and impacts.

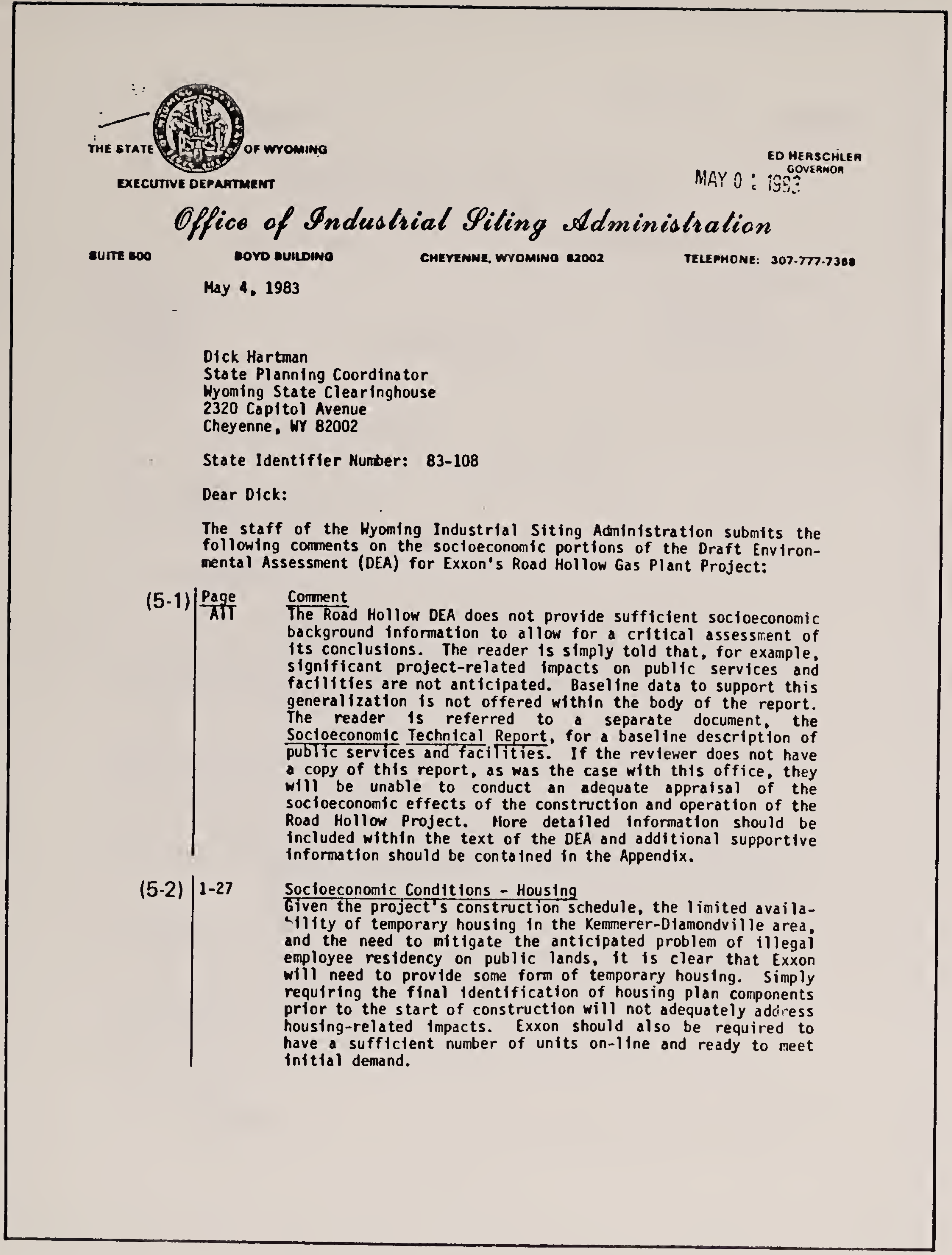
Reference to potential impacts to the Bear River is made on page 3-19, second column, fourth full paragraph. Bridger Creek would not be affected by construction or operation.

Potential spills of construction related liquids are discussed on page 3-12.

(4-17) Potential accidental releases of condensate, NGL, or H_2S could have locally important, short-term adverse impacts on aquatic biota (page 3-20). These impacts are not considered significant because of the lack of a fishery resource in the areas most likely to be impacted.

(4-18) The DEA has been changed on page 3-44, first column, ninth line. The DEQ has also been changed on page 3-42, first column, second line.

(4-19) This section is intended to be a summary of those impacts discussed previously in Chapter 3 that are considered unavoidable and adverse. To determine the magnitude of these unavoidable adverse impacts refer to the impact analysis by resource in DEA Chapter 3 and Table 1-3 in Chapter 1.



THE STATE OF WYOMING

EXECUTIVE DEPARTMENT

ED HERSCHLER
GOVERNOR

Office of Industrial Siting Administration

SUITE 500 BOYD BUILDING CHEYENNE, WYOMING 82002 TELEPHONE: 307-777-7368

MAY 0 [illegible] 1983

May 4, 1983

Dick Hartman
State Planning Coordinator
Wyoming State Clearinghouse
2320 Capitol Avenue
Cheyenne, WY 82002

State Identifier Number: 83-108

Dear Dick:

The staff of the Wyoming Industrial Siting Administration submits the following comments on the socioeconomic portions of the Draft Environmental Assessment (DEA) for Exxon's Road Hollow Gas Plant Project:

	Page	Comment
(5-1)	All	The Road Hollow DEA does not provide sufficient socioeconomic background information to allow for a critical assessment of its conclusions. The reader is simply told that, for example, significant project-related impacts on public services and facilities are not anticipated. Baseline data to support this generalization is not offered within the body of the report. The reader is referred to a separate document, the Socioeconomic Technical Report, for a baseline description of public services and facilities. If the reviewer does not have a copy of this report, as was the case with this office, they will be unable to conduct an adequate appraisal of the socioeconomic effects of the construction and operation of the Road Hollow Project. More detailed information should be included within the text of the DEA and additional supportive information should be contained in the Appendix.
(5-2)	1-27	Socioeconomic Conditions - Housing Given the project's construction schedule, the limited availability of temporary housing in the Kemmerer-Diamondville area, and the need to mitigate the anticipated problem of illegal employee residency on public lands, it is clear that Exxon will need to provide some form of temporary housing. Simply requiring the final identification of housing plan components prior to the start of construction will not adequately address housing-related impacts. Exxon should also be required to have a sufficient number of units on-line and ready to meet initial demand.

(5-1) In accordance with CEQ regulations, the amount of detail presented for each resource topic should be commensurate with the anticipated level of significance of impacts. Two technical reports were prepared for this EA: wildlife and socioeconomics, in anticipation of a larger number and greater magnitude of impacts. As described on page 2-1 of the DEA, those reports are available at the BLM Kemmerer Resource Area Office and the BLM Rock Springs District Office. Results of those analyses and detailed descriptions of the more significant impacts are presented in the DEA.

(5-2) The Applicant has committed to development of a housing plan that would provide housing, if necessary, for in-migrating construction workers (pages 1-27 and 3-33). It is not clear that additional housing would be necessary based on recent and substantial increases in unemployment in Evanston and Kemmerer and continued uncertainty relative to continued development of energy resources in the area. It is for this reason that, although the applicant remains committed to a housing plan, specific provisions such as the number of housing units required for the initial construction work force would not be determined until the project nears its start and existing conditions can be accurately assessed.

Dick Hartman
May 4, 1983
Page

(5-3) 1-27 2-45 2-46 3-33

Social Services

The potential for adverse project-related impacts on social service agencies, in both the Proposed and Alternative courses of action, is mentioned throughout the DEA. The DEA also mentions the limited financial resources of these agencies and the fact that they may be facing additional Federal funding cuts. Unfortunately, more specific information was not provided but it would appear that merely monitoring for additional impacts on programs which are presently overburdened will not sufficiently address project-related impacts. A good monitoring program will be of value in determining Exxon's fair share of the burden in future years but some form of up-front mitigation should be required if the project's initial impacts are to be mitigated.

(5-4) 1-27

Schools

A more detailed assessment of the probable effects of the school funding equalization issue should have been included. What steps will be taken to insure the affected schools will receive assistance in time to actually meet the demand? If Applicant participation is only required for overload situations during the operation period, will this mean that schools will have to endure possibly extended periods of overloading before assistance will be required? Are there any contingency plans to provide assistance during the construction period should this prove to be needed?

Sincerely,

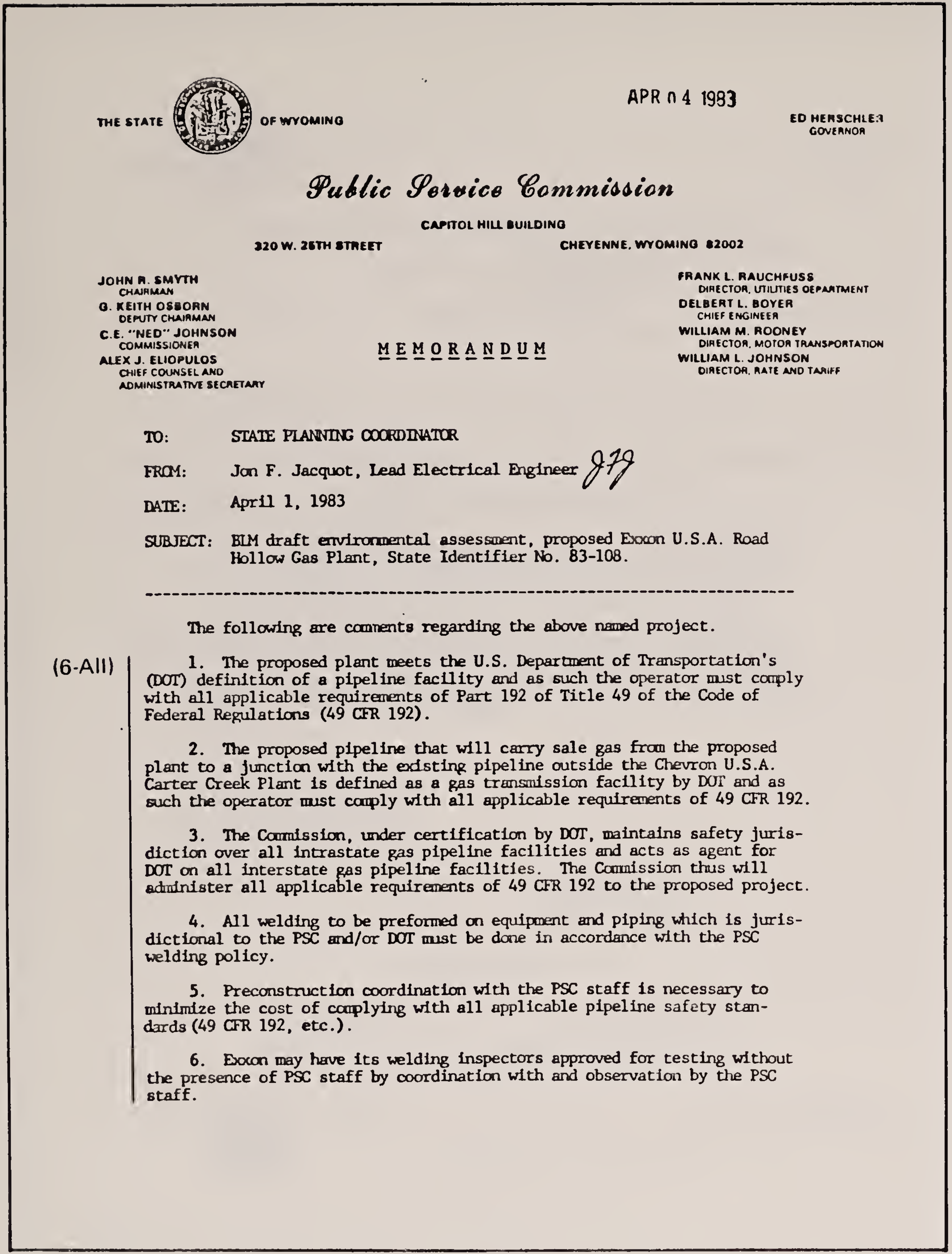
Richard C Moore

Richard C. Moore, P.E.
Director

RCM/ed

(5-3) The EA Technical Report for Socioeconomics (available at BLM offices in Kemmerer and Rock Springs) provides more detailed discussion of local area social services facilities. Since conditions affecting area social services levels are currently in flux due to many factors (including the national and regional recessions) the monitoring program proposed by EXXON was determined to be an adequate committment to identify and mitigate specific project-related impacts. The program would be initiated prior to construction and would be designed with benefit of discussions with relevant agency officials.

(5-4) A detailed assessment of the probable effects of the school funding equalization issue would not contribute to the analysis presented in this EA. As discussed immediately above for assistance to social service agencies, a project-related overload situation was discussed as a worst-case possibility. The committed monitoring program would document these problems if they were to occur and would provide specific information based on which the school district and the applicant would develop a mitigation solution. The BLM is satisfied with this approach in light of the public schools' experience wth major construction projects in the area, and discussions with the district superintendent who anticipates that few Road Hollow-related in-migrating construction workers' children would enroll in local schools (page 4-11 Socioeconomic Technical Report).



APR 04 1983

THE STATE OF WYOMING

ED HERSCHLER
GOVERNOR

Public Service Commission

CAPITOL HILL BUILDING
320 W. 25TH STREET
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WILLIAM L. JOHNSON
DIRECTOR, RATE AND TARIFF

MEMORANDUM

TO: STATE PLANNING COORDINATOR

FROM: Jon F. Jacquot, Lead Electrical Engineer JFJ

DATE: April 1, 1983

SUBJECT: BLM draft environmental assessment, proposed Exxon U.S.A. Road Hollow Gas Plant, State Identifier No. 83-108.

The following are comments regarding the above named project.

(6-AII) 1. The proposed plant meets the U.S. Department of Transportation's (DOT) definition of a pipeline facility and as such the operator must comply with all applicable requirements of Part 192 of Title 49 of the Code of Federal Regulations (49 CFR 192).

2. The proposed pipeline that will carry sale gas from the proposed plant to a junction with the existing pipeline outside the Chevron U.S.A. Carter Creek Plant is defined as a gas transmission facility by DOT and as such the operator must comply with all applicable requirements of 49 CFR 192.

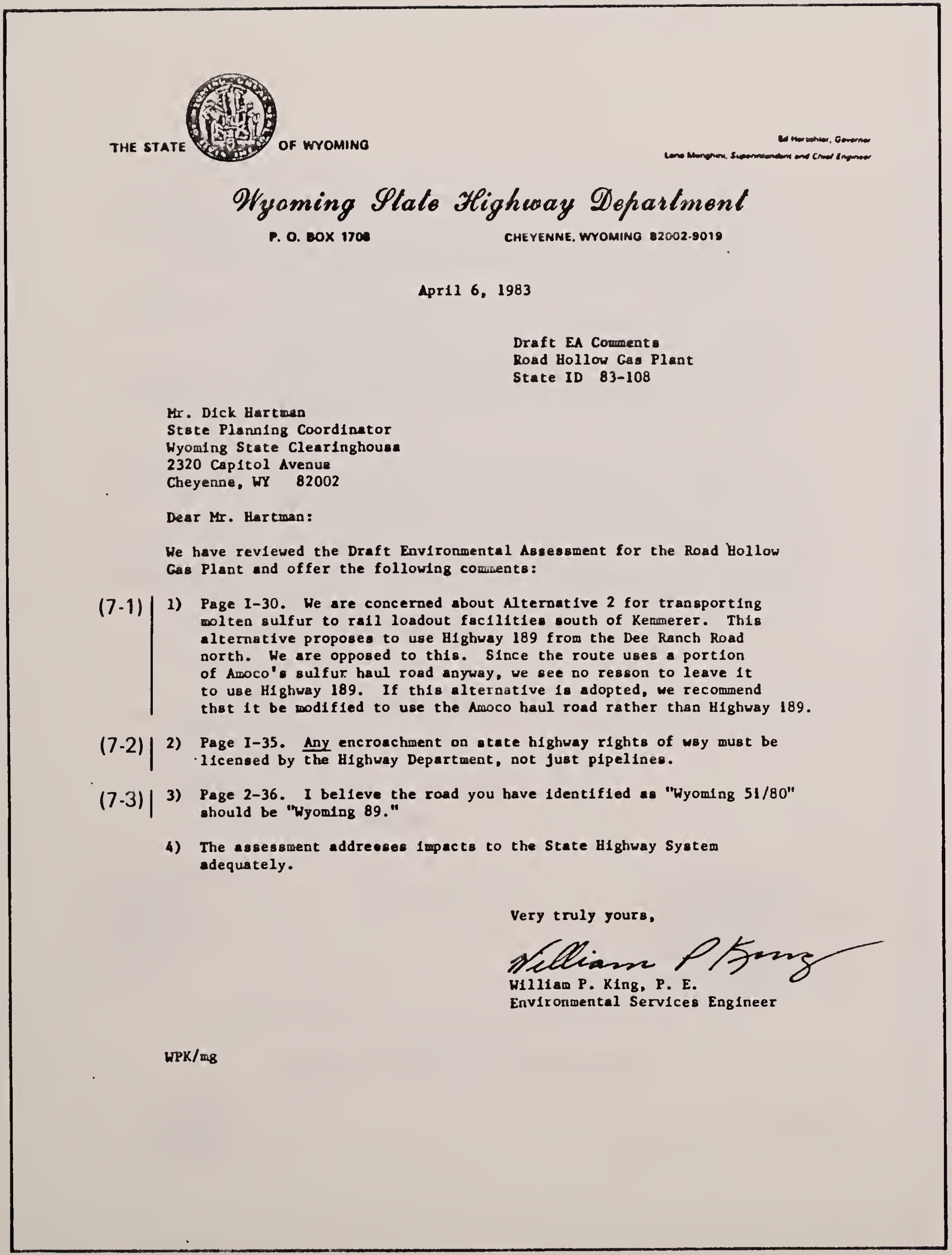
3. The Commission, under certification by DOT, maintains safety jurisdiction over all intrastate gas pipeline facilities and acts as agent for DOT on all interstate gas pipeline facilities. The Commission thus will administer all applicable requirements of 49 CFR 192 to the proposed project.

4. All welding to be preformed on equipment and piping which is jurisdictional to the PSC and/or DOT must be done in accordance with the PSC welding policy.

5. Preconstruction coordination with the PSC staff is necessary to minimize the cost of complying with all applicable pipeline safety standards (49 CFR 192, etc.).

6. Exxon may have its welding inspectors approved for testing without the presence of PSC staff by coordination with and observation by the PSC staff.

(6-AII) All comments would be included by BLM as stipulations to a ROW grant.



THE STATE OF WYOMING

Ed Herschler, Governor
Leno Menghini, Superintendent and Chief Engineer

Wyoming State Highway Department

P. O. BOX 1708 CHEYENNE, WYOMING 82002-9019

April 6, 1983

Draft EA Comments
Road Hollow Gas Plant
State ID 83-108

Mr. Dick Hartman
State Planning Coordinator
Wyoming State Clearinghouse
2320 Capitol Avenue
Cheyenne, WY 82002

Dear Mr. Hartman:

We have reviewed the Draft Environmental Assessment for the Road Hollow Gas Plant and offer the following comments:

(7-1) 1) Page I-30. We are concerned about Alternative 2 for transporting molten sulfur to rail loadout facilities south of Kemmerer. This alternative proposes to use Highway 189 from the Dee Ranch Road north. We are opposed to this. Since the route uses a portion of Amoco's sulfur haul road anyway, we see no reason to leave it to use Highway 189. If this alternative is adopted, we recommend that it be modified to use the Amoco haul road rather than Highway 189.

(7-2) 2) Page I-35. Any encroachment on state highway rights of way must be licensed by the Highway Department, not just pipelines.

(7-3) 3) Page 2-36. I believe the road you have identified as "Wyoming 51/80" should be "Wyoming 89."

4) The assessment addresses impacts to the State Highway System adequately.

Very truly yours,

William P King

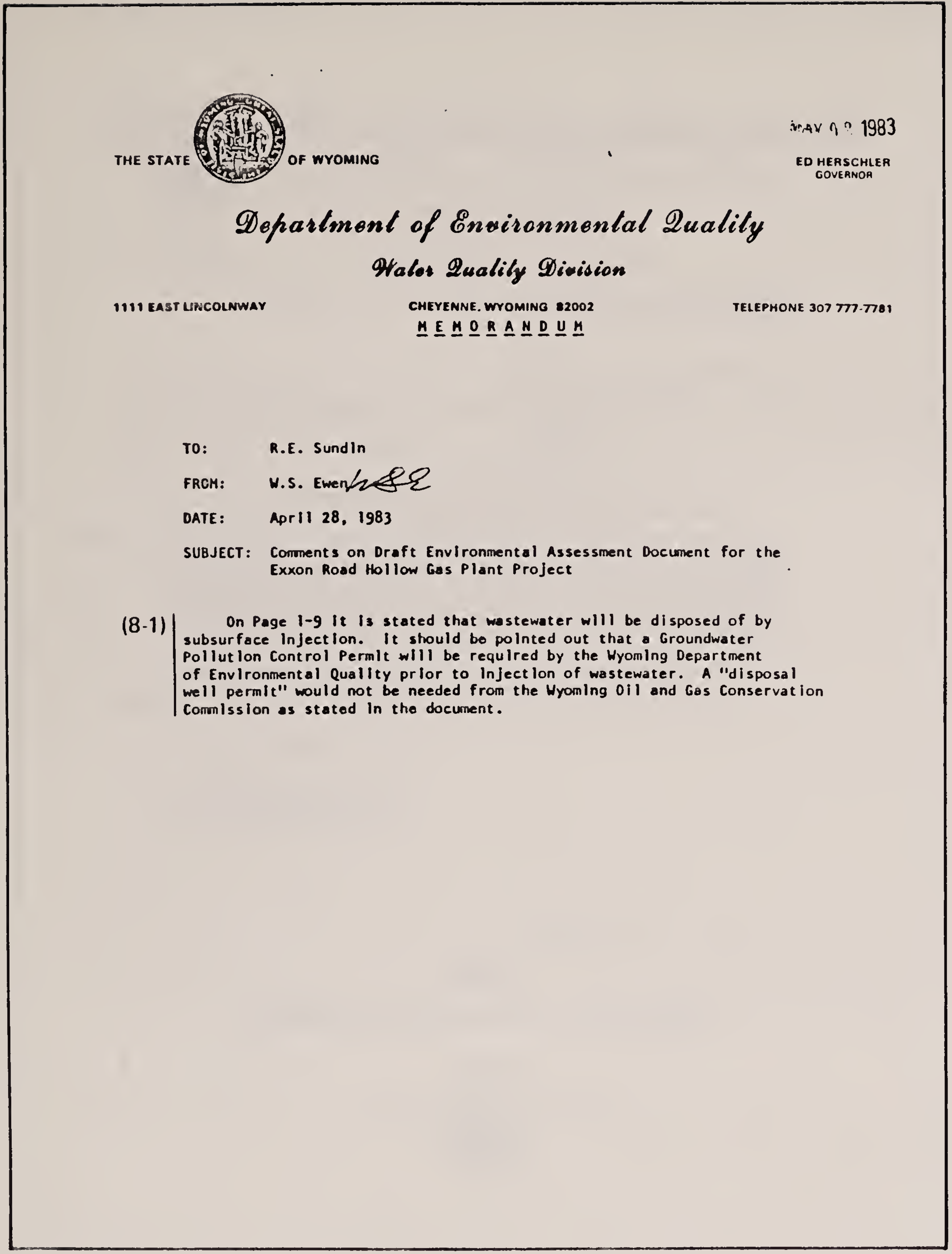
William P. King, P. E.
Environmental Services Engineer

WPK/mg

(7-1) Transport of molten sulfur on Highway 189 from Dee Ranch Road (Alternative 2) would be accomplished within the weight limits required for this roadway. Coordination with the Wyoming State Highway Department would be required. The applicant would not be able to use the AMOCO sulfur haul road north of Dee Ranch Road because this section was designed for one-way traffic and significant safety problems could arise if traffic from AMOCO and EXXON attempt simultaneous use.

(7-2) The DEA has been changed on page 1-35.

(7-3) The DEA has been changed on page 2-36.



THE STATE OF WYOMING

MAY 02 1983

ED HERSCHLER
GOVERNOR

Department of Environmental Quality

Water Quality Division

1111 EAST LINCOLNWAY
CHEYENNE, WYOMING 82002
TELEPHONE 307 777-7781

MEMORANDUM

TO: R.E. Sundin

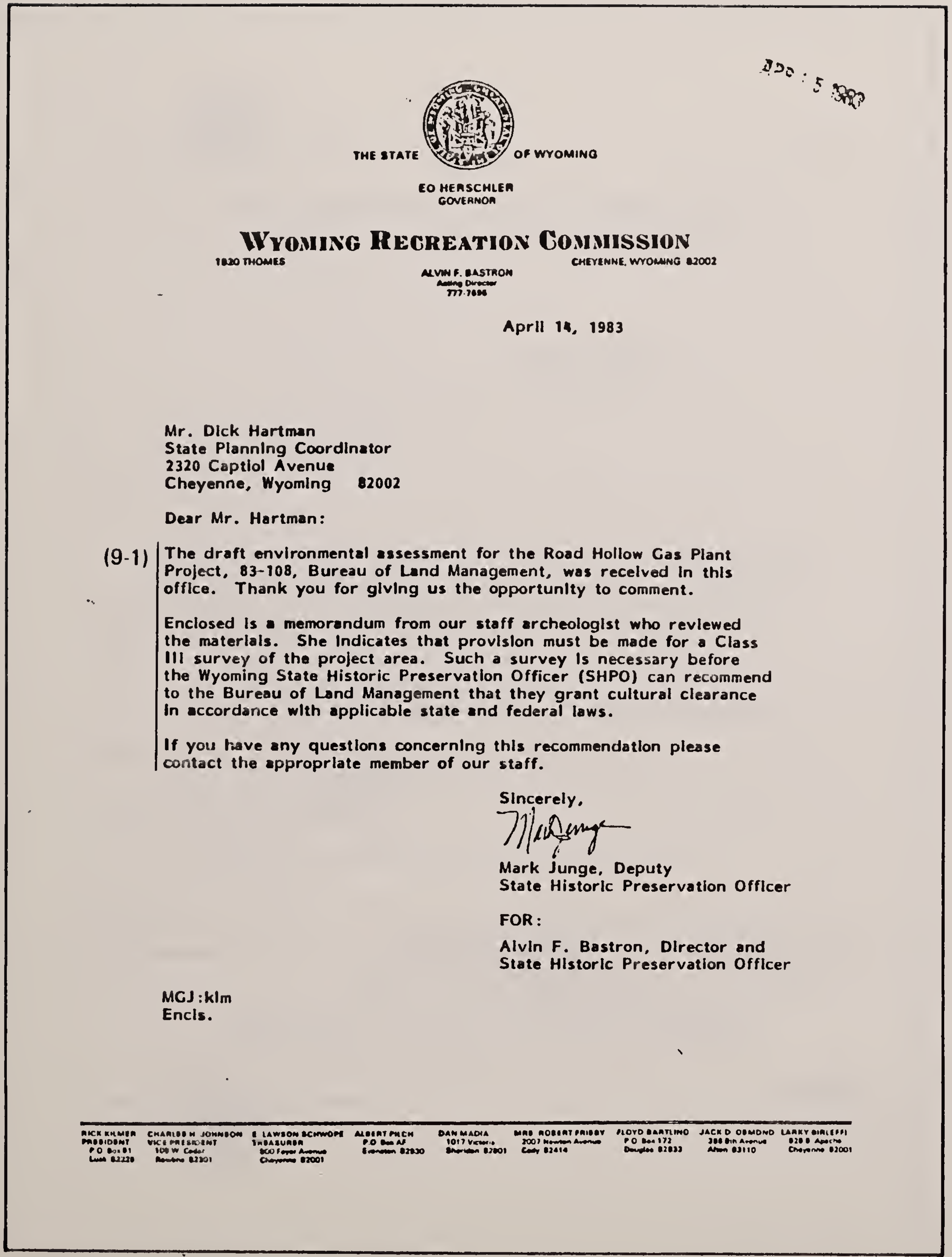
FROM: W.S. Ewen

DATE: April 28, 1983

SUBJECT: Comments on Draft Environmental Assessment Document for the Exxon Road Hollow Gas Plant Project

(8-1) On Page 1-9 it is stated that wastewater will be disposed of by subsurface injection. It should be pointed out that a Groundwater Pollution Control Permit will be required by the Wyoming Department of Environmental Quality prior to injection of wastewater. A "disposal well permit" would not be needed from the Wyoming Oil and Gas Conservation Commission as stated in the document.

(8-1) **The DEA has been changed on page 1-9.**



APR 15 1983

THE STATE OF WYOMING

ED HERSCHLER
GOVERNOR

WYOMING RECREATION COMMISSION

1820 THOMES
CHEYENNE, WYOMING 82002

ALVIN F. BASTRON
Acting Director
777-7696

April 14, 1983

Mr. Dick Hartman
State Planning Coordinator
2320 Captiol Avenue
Cheyenne, Wyoming 82002

Dear Mr. Hartman:

(9-1) The draft environmental assessment for the Road Hollow Gas Plant Project, 83-108, Bureau of Land Management, was received in this office. Thank you for giving us the opportunity to comment.

Enclosed is a memorandum from our staff archeologist who reviewed the materials. She indicates that provision must be made for a Class III survey of the project area. Such a survey is necessary before the Wyoming State Historic Preservation Officer (SHPO) can recommend to the Bureau of Land Management that they grant cultural clearance in accordance with applicable state and federal laws.

If you have any questions concerning this recommendation please contact the appropriate member of our staff.

Sincerely,

Mark Junge, Deputy
State Historic Preservation Officer

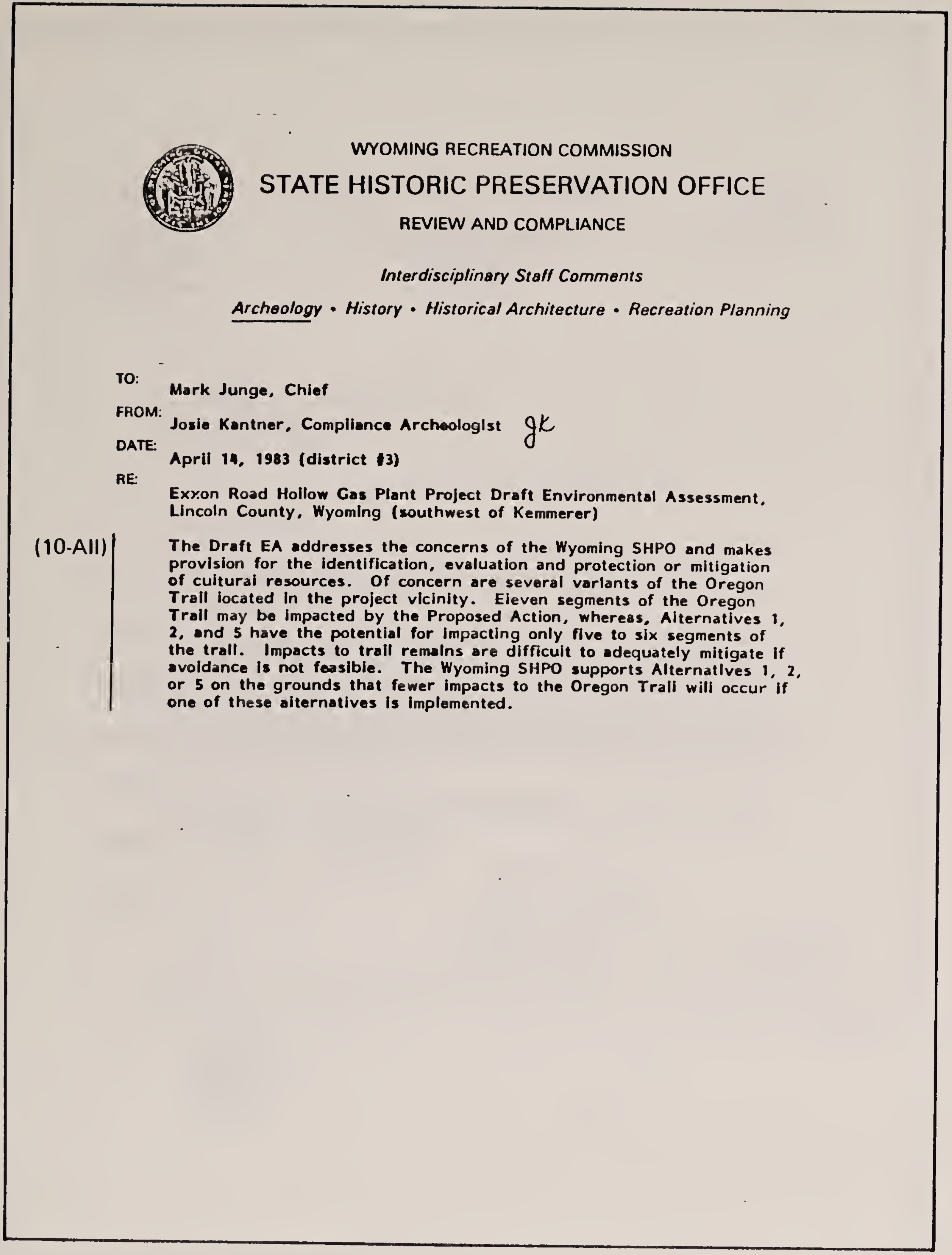
FOR:

Alvin F. Bastron, Director and
State Historic Preservation Officer

MGJ:klm
Encls.

RICK KILMER PRESIDENT P O Box 81 Lusk 82225
CHARLES H JOHNSON VICE PRESIDENT 109 W Cedar Rawlins 82301
E LAWSON SCHWOPE TREASURER 800 Foyer Avenue Cheyenne 82001
ALBERT PILCH P.O Box AF Evanston 82930
DAN MADIA 1017 Victoria Sheridan 82801
MRS ROBERT FRISBY 2007 Newton Avenue Cody 82414
FLOYD BARTLING P O Box 172 Douglas 82633
JACK D OSMOND 388 8th Avenue Afton 83110
LARRY BIRLEFFI 820 E Apache Cheyenne 82001

(9-1) The applicant has committed to BLM Class III inventories "in those areas where ground disturbance would occur and for which no previous Class III inventories have been conducted" (DEA page 1-26). Following these inventories mitigation plans would be developed for approval by BLM after appropriate consultation with the Wyoming State Historic Preservation Office.



WYOMING RECREATION COMMISSION
STATE HISTORIC PRESERVATION OFFICE
REVIEW AND COMPLIANCE

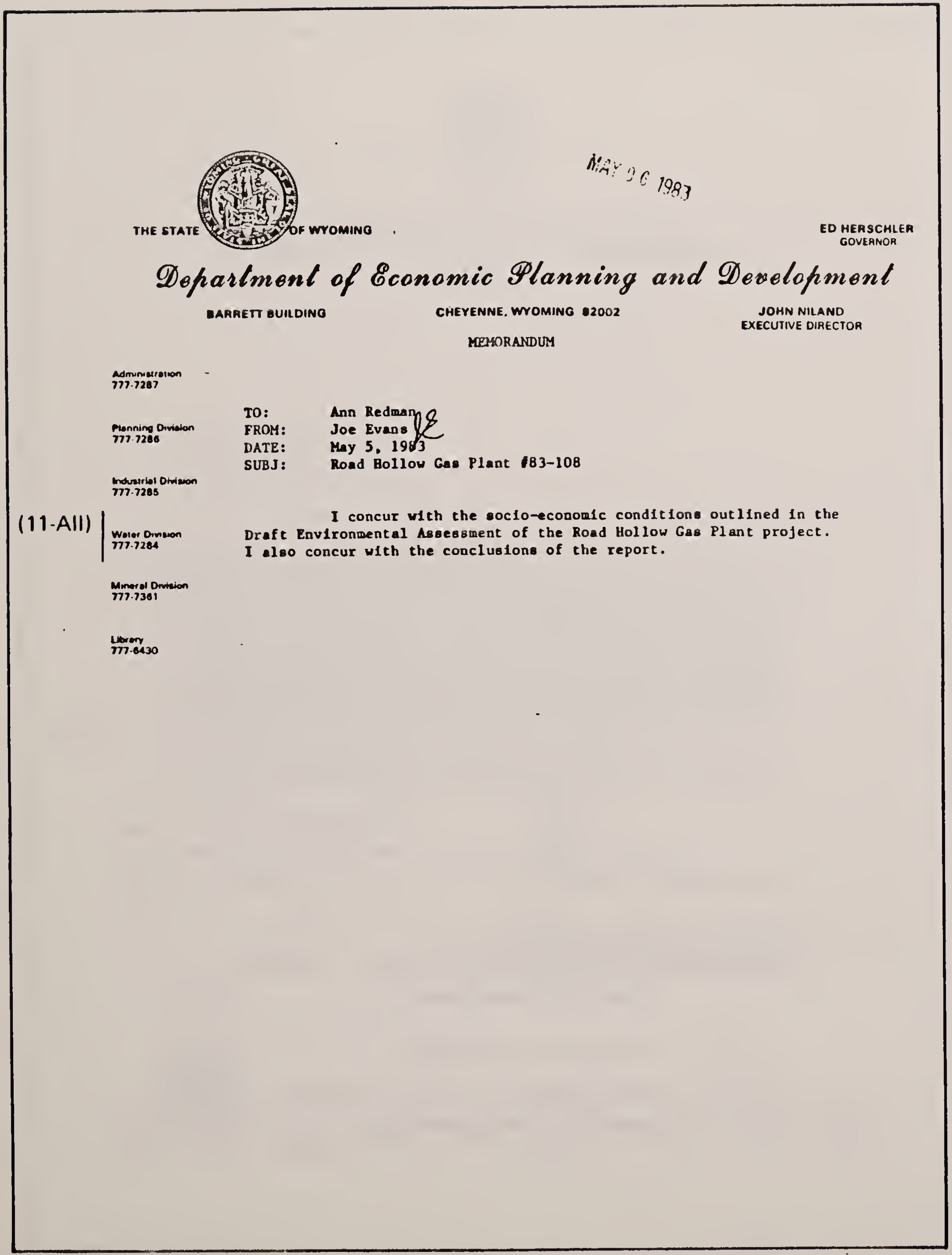
Interdisciplinary Staff Comments

Archeology • History • Historical Architecture • Recreation Planning

TO: **Mark Junge, Chief**
FROM: **Josie Kantner, Compliance Archeologist** jk
DATE: **April 14, 1983 (district #3)**
RE: **Exxon Road Hollow Gas Plant Project Draft Environmental Assessment, Lincoln County, Wyoming (southwest of Kemmerer)**

(10-AII) The Draft EA addresses the concerns of the Wyoming SHPO and makes provision for the identification, evaluation and protection or mitigation of cultural resources. Of concern are several variants of the Oregon Trail located in the project vicinity. Eleven segments of the Oregon Trail may be impacted by the Proposed Action, whereas, Alternatives 1, 2, and 5 have the potential for impacting only five to six segments of the trail. Impacts to trail remains are difficult to adequately mitigate if avoidance is not feasible. The Wyoming SHPO supports Alternatives 1, 2, or 5 on the grounds that fewer impacts to the Oregon Trail will occur if one of these alternatives is implemented.

(10-AII) Concerns regarding several variants of the Oregon Trail and preference for Alternatives 1, 2, and 5 are noted and will be considered in the decision making process.



MAY 26 1983

THE STATE OF WYOMING

ED HERSCHLER
GOVERNOR

Department of Economic Planning and Development

BARRETT BUILDING
CHEYENNE, WYOMING 82002

JOHN NILAND
EXECUTIVE DIRECTOR

MEMORANDUM

Administration
777-7287

Planning Division
777-7286

Industrial Division
777-7285

Water Division
777-7284

Mineral Division
777-7361

Library
777-6430

TO: Ann Redman
FROM: Joe Evans
DATE: May 5, 1983
SUBJ: Road Hollow Gas Plant #83-108

(11-AII) I concur with the socio-economic conditions outlined in the Draft Environmental Assessment of the Road Hollow Gas Plant project. I also concur with the conclusions of the report.

83-108

CHAIRMAN
GOVERNOR ED HERSCHLER

COMMISSIONERS
OSCAR E. SWAN
BERN WHITTAKER
RICHARD S. CROSS
[redacted]
GARY B. GLASS

The State of Wyoming

OFFICE OF
OIL AND GAS CONSERVATION COMMISSION
STATE OIL AND GAS SUPERVISOR
123 SOUTH DURBIN
P. O. BOX 2640
CASPER
82602

STATE OIL AND GAS SUPERVISOR
DONALD B. BASKO

EX OFFICIO DIRECTOR OF
OIL AND GAS CONSERVATION

April 15, 1983

Dick Hartman
State Planning Coordinator's Office
Wyoming State Clearing House
2320 Capitol Avenue
Cheyenne, WY 82002

Re: The Road Hollow Gas Plant Project

Dear Mr. Hartman:

(12-A11) In reply to your memorandum of March 22, 1983 regarding the draft environmental assessment for Exxon Company Road Hollow Gas Plant Project, this is to advise that I strongly recommend that the company be allowed to proceed.

Exxon Company has made a discovery in the Road Hollow Unit which is sour gas from the Big Horn Formation. In order to market that gas, it will be necessary for it to be treated through a plant, which is what Exxon is proposing. Now that Chevron's and Amoco's plants are completed and on stream, it is obvious that those companies complied with the requests of the governmental agencies regarding the environment and the impact created is certainly outweighed by the benefits derived from the installation of those facilities.

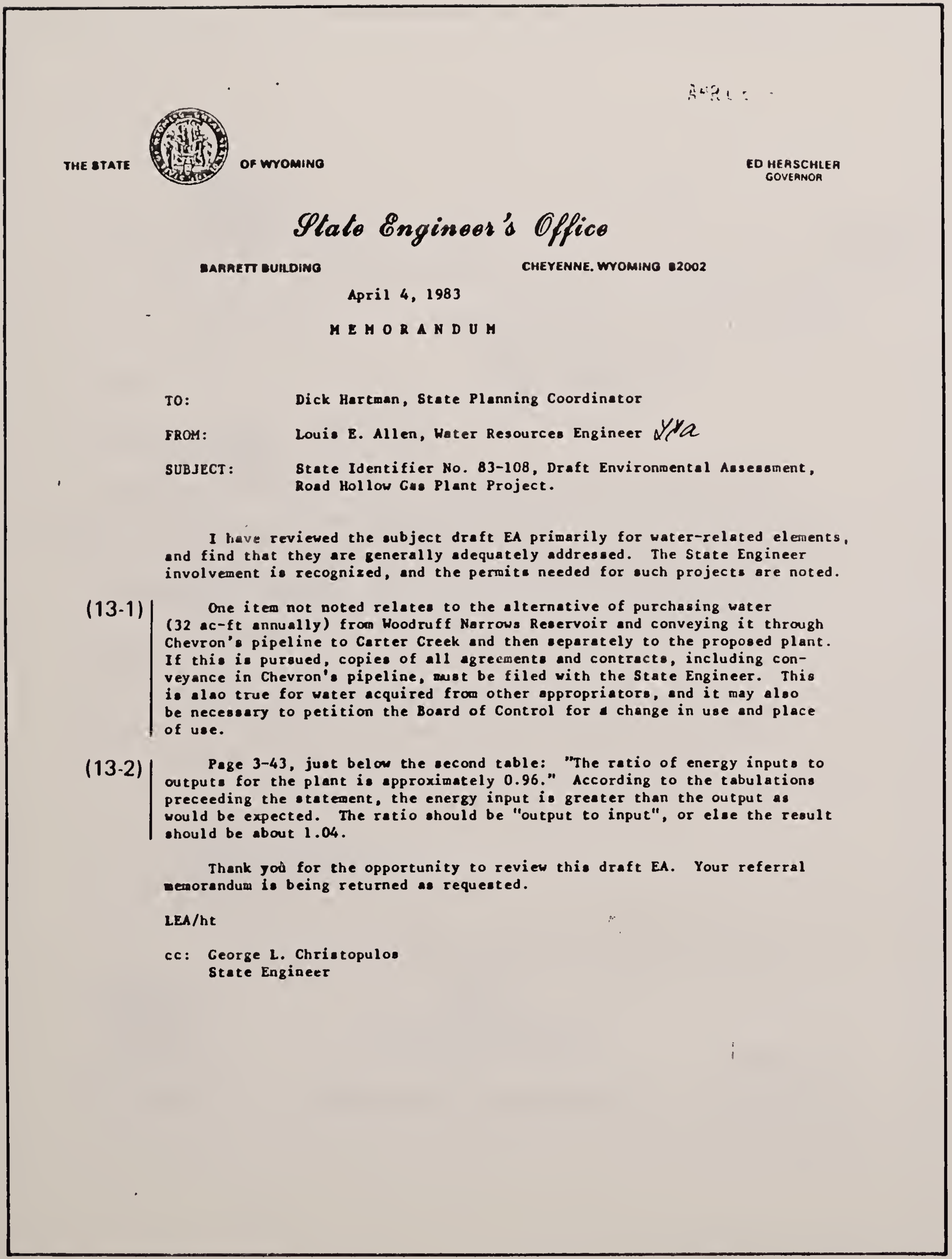
The completion of the Exxon Road Hollow Plant will likewise be of benefit to the Kemmerer area--Lincoln County in general--and the State of Wyoming.

Very truly yours,

Donald B. Basko

DBB:wal

Donald B. Basko,
State Oil and Gas Supervisor



THE STATE OF WYOMING

ED HERSCHLER
GOVERNOR

State Engineer's Office

BARRETT BUILDING CHEYENNE, WYOMING 82002

April 4, 1983

MEMORANDUM

TO: Dick Hartman, State Planning Coordinator

FROM: Louis E. Allen, Water Resources Engineer

SUBJECT: State Identifier No. 83-108, Draft Environmental Assessment, Road Hollow Gas Plant Project.

I have reviewed the subject draft EA primarily for water-related elements, and find that they are generally adequately addressed. The State Engineer involvement is recognized, and the permits needed for such projects are noted.

(13-1) One item not noted relates to the alternative of purchasing water (32 ac-ft annually) from Woodruff Narrows Reservoir and conveying it through Chevron's pipeline to Carter Creek and then separately to the proposed plant. If this is pursued, copies of all agreements and contracts, including conveyance in Chevron's pipeline, must be filed with the State Engineer. This is also true for water acquired from other appropriators, and it may also be necessary to petition the Board of Control for a change in use and place of use.

(13-2) Page 3-43, just below the second table: "The ratio of energy inputs to outputs for the plant is approximately 0.96." According to the tabulations preceeding the statement, the energy input is greater than the output as would be expected. The ratio should be "output to input", or else the result should be about 1.04.

Thank you for the opportunity to review this draft EA. Your referral memorandum is being returned as requested.

LEA/ht

cc: George L. Christopulos
State Engineer

(13-1) The EA has been changed on page 1-34.

(13-2) The text has been changed on page 3-43.

May 5, 1983

RECEIVE

Forestry
Admin.
Cur. Comp.

Steve Howard, Kemmerer Resource Area Manager
Bureau of Land Management
P.O. Box 632
Kemmerer, Wyoming 83101

Dear Mr. Howard:

In regard to the Draft Environmental Assessment of Exxon's proposed Road Hollow Gas Plant Project (reference number 1791 470), I would like to submit some comments on the alternatives considered and certain impact assessments.

(14-1) First of all, the use of existing facilities (of Amoco and/or Chevron) should be explored as an alternative to construction of the gas processing plant. It was stated that this alternative was considered to be infeasible (p.1-28), but it was also stated that Exxon is attempting to negotiate such an action, which suggests that it is feasible. Use of existing facilities would eliminate the need for the 40-acre plant site and the 22 mile eastern access road, so the impacts of this alternative should be explored. It seems that the most economical and least detrimental uses of public lands should be considered to be feasible alternatives.

(14-2) Secondly, the alternative to constructing the eastern access road/sulfur haul road (not constructing it) is not considered seriously enough and the real need for it is not apparent. It is claimed that lack of the new access road would result in increased traveling for workers in Kemmerer (p.3-26), but it appears that the trip via existing roads U.S. 30N and the Bear River Divide Road is approximately the same as it would be via U.S. 189 and the new access road. If this is the case, the only remaining reason for construction of the road would be for direct access from the plant to the existing sulfur loadout site. This use, which could be rerouted, does not appear to justify construction which would have the following significant impacts:

1) Paleontological resources of high sensitivity (Fossil Butte Member of the Green River Formation and the Wasatch Formation) (table 2-4) could be destroyed. The value of these fossils has been recognized in the creation of the nearby Fossil Butte National Monument. Furthermore, mitigating measures to prevent such destruction are inadequate because they allow for the possible excavation of such fossils by non-experts (p.1-25).

2) Important species of wildlife will be adversely affected. The proposed road passes through the strutting grounds and nesting areas of the sage grouse. There are also nests of red tailed hawks in the area. Use of existing roads would prevent disruption of these habitats. It would also prevent road-kill mortality to important big game species in the area, such as mule deer, pronghorn and elk.

3) Use of existing roads would also prevent roadkill of cattle and sheep grazing in the area and would also prevent disruption of lambing operations. This alternative would also preserve rangeland acreage.

(14-1) **Please refer to the response for comment 1-2.**

(14-2) **One of the alternatives to the Proposed Eastern Access road (Alternative 1) has been selected by the BLM as the preferred access alternative. This preference will be reflected in the Draft Record of Decision included in the FEA.**

(2)

4) Cultural resources of significance have been identified in the area. There are six prehistoric cultural resources located within the access road's right-of-way, one of which had been recommended for inclusion in the National Register of Historic Places (p.2-28). The right-of-way also crosses segments of the Oregon Trail (historic cultural resource), which is designated a National Historic Trail (p.2-32). Proposed mitigating measures are insufficient because, despite various measures, the Cultural Resources Management Plan (p.1-26) still allows for the possibility of the road crossing such sites.

For three of the four impact area assessments mentioned above, this alternative of use of existing roads is not discussed. This alternative should be given more serious consideration, especially since there is a suggestion in chapter 1 (p.1-30) that there may not even be a demand for sulfur at the existing sulfur load-out site, which would make the road for the purpose of sulfur hauling unnecessary.

Finally, certain impact area assessments leave many unanswered questions, particularly those concerning geology and water quality:

(14-3) 1) Geology - It is stated that Rock Creek fault extends to within 5 miles of the plant site, but that the potential for damage due to surface rupture is "undetermined". Can some estimate of the possibility of rupture be made? It is important because structural damage could cause release of untreated H_2S. Furthermore, in such a case, what would be the hazard to to workers on the site? (This is not discussed in the Health and Safety analysis.)

Also, it is noted (p.2-5) that in 128 years (1850-1978), there have been 107 earthquakes, approximately half of which registered between 2.0 to 3.9. While a probability of the "worst case" earthquake (6.5 - 7) was estimated and found to be small, no probability was given for an earthquake of lesser magnitude which could also cause damage to structures and pipelines. Given the frequency of earthquakes in the area and the possibility of serious consequences, the probability of any earthquake capable of structural damage should be determined.

(14-4) 2) Water Quality - The water quality statistics given in Table 2-5 whould be analyzed and interpreted in the body of the report, so that the impact of effluents can be measured. For instance, wastewater containing H_2S will be disposed of in an injection well at the rate of 6 gpm (p.3-13). However, no determination of the impact of this contaminated water on nearby streams was made. Is it possible that this waste water could seep into nearby streams? If so, what would be the impact on water quality and on fish, wildlife and livestock? Also, the impact of treated sewage on nearby streams was not measured. Finally, what is the scientific basis for the water quality index in Appendix F? It is not a measure of water quality, but rather simply a statement of the proportion of the acreage of each project to its distance from a drainage area. Water quality assessment should measure levels of various pollutants in nearby streams and creeks before and after discharge from sources such as the plant.

I would appreciate your considering these comments and questions in the drafting of the final environmental impact assessment.

Sincerely,

a Geraci

Ann Geraci
702 W. University
Champaign, Ill. 61820

(14-3) Potentially significant consequences to the environment which could result from a worst-case earthquake were determined to be limited to those associated with an accidental release of H_2S from facilities, were they to be damaged in such an event.

Consequences associated with an accidental release of H_2S are presented on DEA pages 1-23 and 3-42. Further discussion of these consequences has been added to the DEA on pages 3-7 and 3-42.

Facilities damage from lesser, still rare, but more common then worst-case magnitude earthquakes, would not be expected since standards applicable to the proposed facilities design already incorporate criteria for ANSI seismic zone 2.

(14-4) On DEA page 3-13 it is stated that "It is expected that water quality degradation would be limited primarily to formation waters found in the immediate vicinity of the well." Further predictions of impact to ground water or surface water cannot be made until it is determined what formation water would receive wastewater. This would be accomplished at a future time of a DEQ permit application (page 1-34 of the DEA).

Impacts to water quality or soils from treated sewage would be limited to the immediate vicinity of the discharge pipe of the leach fields from the septic pipe in accordance with Wyoming DEQ regulations (page 3-13 of the DEA).

The water quality index explained in Appendix F is a relative measure of the potential for water quality impacts that was used to compare alternatives. It was not intended to be a direct measure of impacts to water quality.

The water quality assessment did not address the potential for increases in the levels of various pollutants in nearby streams because there would not be any planned discharge from the proposed plant (page 1-9 of the DEA). In the event of accidental spills, the levels of spilled pollutants would be monitored as committed to by the applicant on page 1-25 of DEA and as specified by the DEQ.

LITERATURE CITED

Bureau of Land Management. 1980. Final environmental assessment, Whitney Canyon and Carter Creek natural gas processing projects. Rock Springs District, Wyoming.

__________. 1981. Supplemental Chevron water pipeline environmental assessment. Kemmerer, Wyoming.

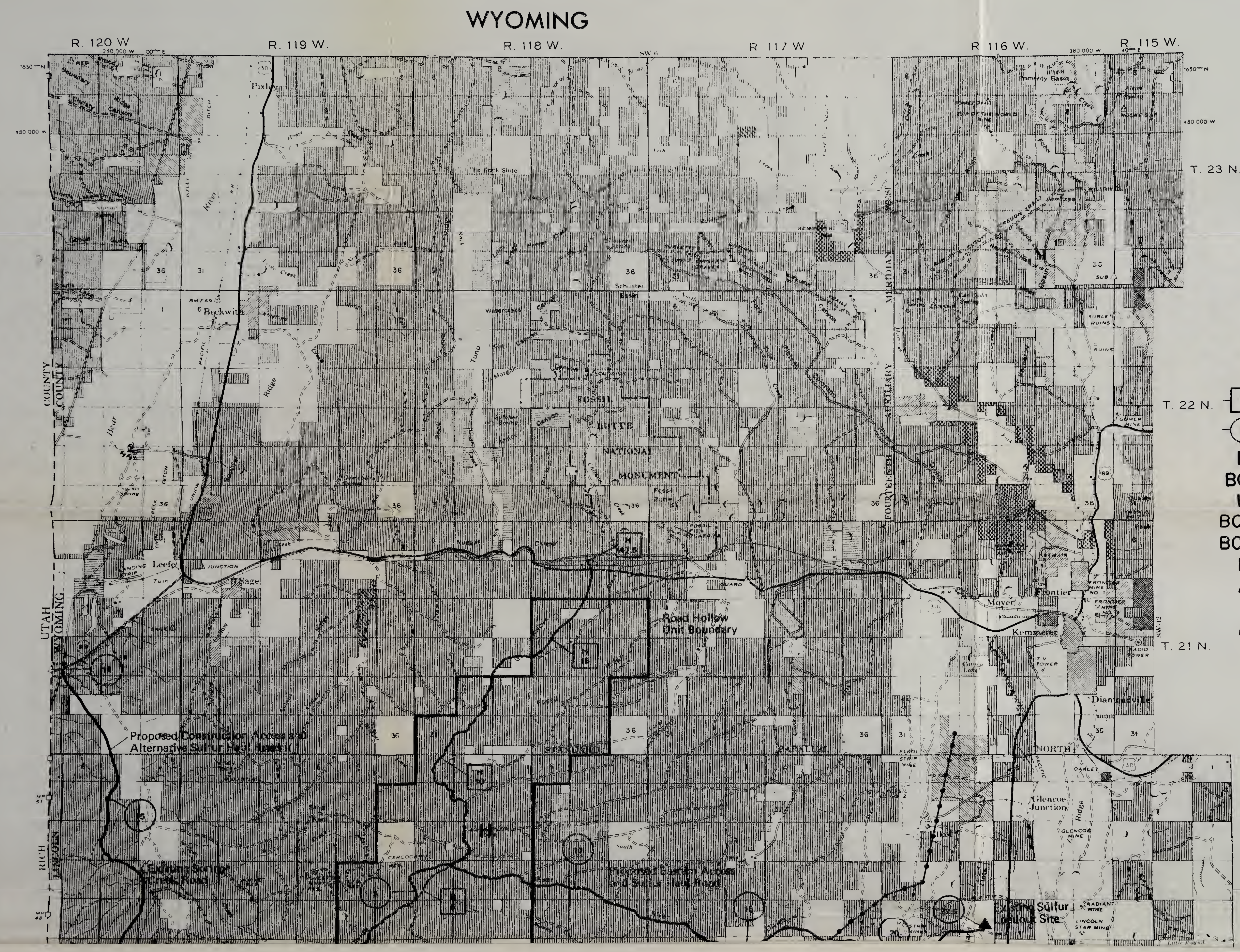
__________. 1983. Road Hollow gas plant project, draft environmental assessment. Kemmerer, Wyoming.

U.S. Environmental Protection Agency (EPA). 1974. Information on levels of environmental noise requisite to protect public health and welfare with an adequate margin of safety. EPA 550/9-74-004. U.S. Govt. Printing Office, Washington, D.C.

__________. 1979. Compilation of air pollutant emission factors. Publication AP 42. Office of Air and Waste Management, Office of Air Quality Planning and Standards. Research Triangle Park, North Carolina.

MAP G-1. DETAILED LOCATION MAP FOR PROPOSED AND ALTERNATIVE PROJECT COMPONENTS

BLM Library
Denver Federal Center
Bldg. 50, OC-521
P.O. Box 25047
Denver, CO 80225


WYOMING
R. 120 W
R. 119 W.
R. 118 W.
R 117 W
R 116 W.
R. 115 W.
T. 23 N.
T. 22 N.
T. 21 N.
T. 20 N.
Pixley
Beckwith
Leefe
Sage
Schuster
FOSSIL BUTTE NATIONAL MONUMENT
FOURTEENTH AUXILIARY MERIDIAN
The Rock Slide
Tunp
Ridge
Road Hollow Unit Boundary
Proposed Construction Access and Alternative Sulfur Haul Road
Existing Spring Creek Road
Proposed Eastern Access and Sulfur Haul Road
Existing Sulfur Loadout Site
Moyer
Frontier
Kemmerer
Diamondville
Glencoe Junction
UTAH
WYOMING
RICH COUNTY
LINCOLN COUNTY
36
31

LEGEND

ALTERNATIVES, INCLUDING THE PROPOSED ACTION
(as assessed in the DEA)

5	Milepost along Pipeline Routes
5	Milepost along Roads and Transmission Line—Alternative 1
B	Sales Gas Pipeline—Proposed Action
BCD	Sales Gas Pipeline—Alternative 1
H	Sales Gas Pipeline--Alternative 2
BCEF	*Condensate and NGL Pipelines--Proposed Action*
BCEG	Condensate and NGL Pipelines—Alternative 1
B	Water Supply Pipeline—Alternative 1
A	Transmission Line—Alternative 1

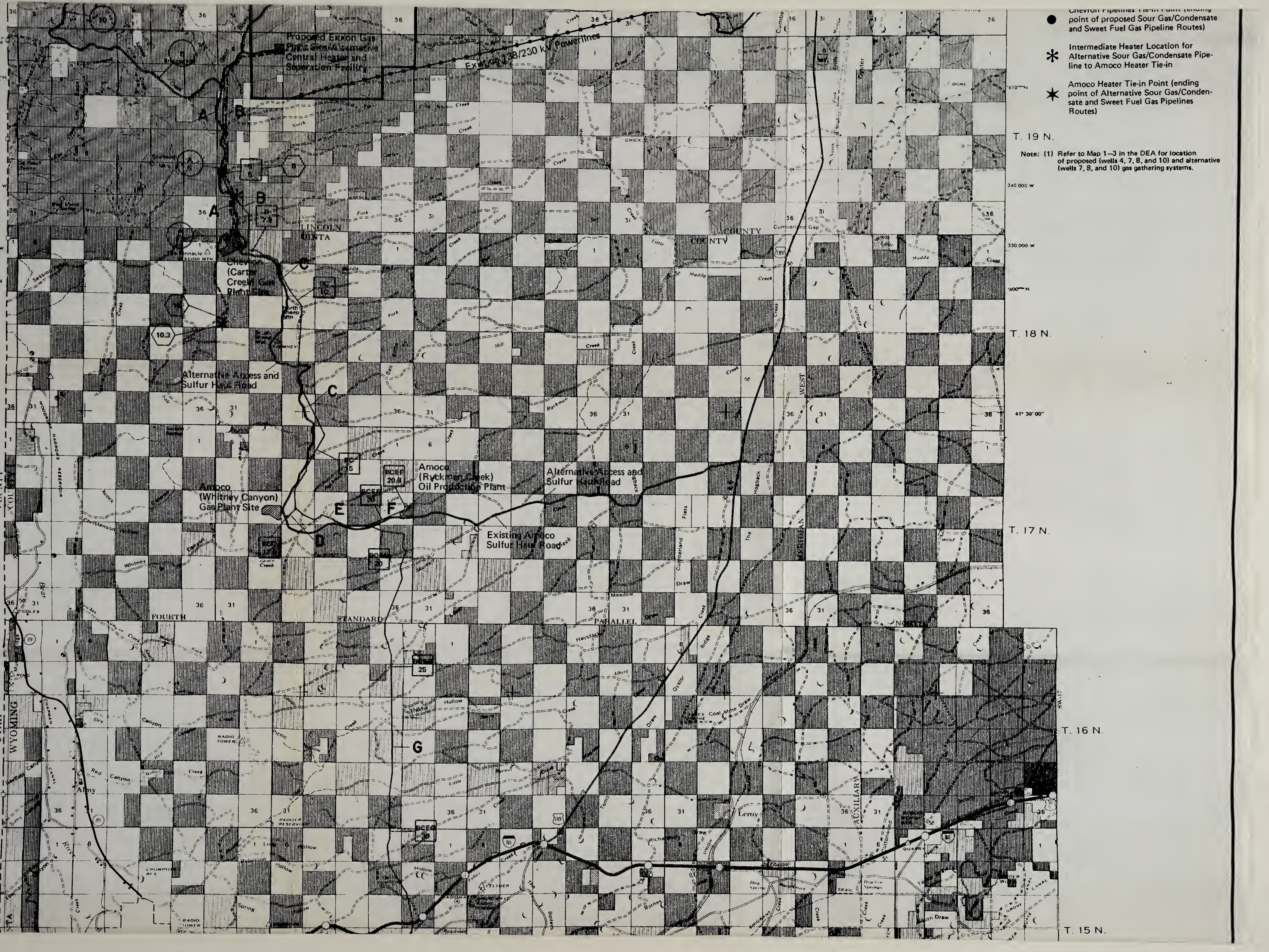
Notes: (1) The proposed gas plant site is milepost 0 for all linear project components.

(2) Refer to Map 1-3 for location of the gas gathering system and proposed transmission line.

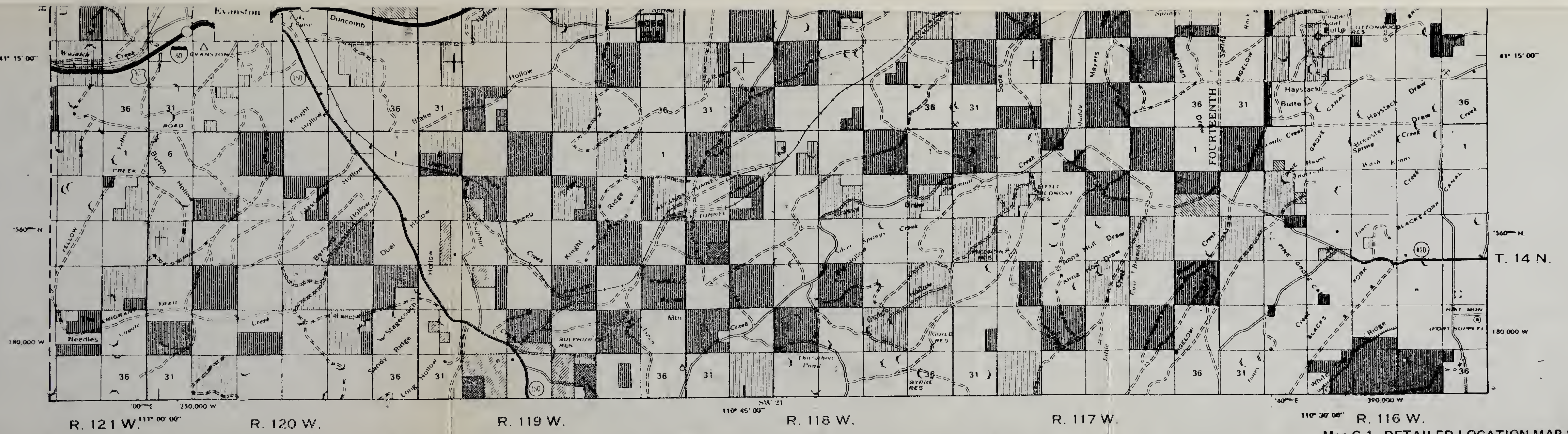
(3) Base map compiled from BLM Surface-Minerals Management Quads.

INTERIM GAS PROCESSING ALTERNATIVE
(as assessed in the FEA)

----	Proposed and Alternative Sour Gas/Condensate and Sweet Fuel Gas Pipeline Routes
5	Milepost along Pipeline Routes



Chevron Pipelines Tie-in Point (ending point of proposed Sour Gas/Condensate and Sweet Fuel Gas Pipeline Routes)
Intermediate Heater Location for Alternative Sour Gas/Condensate Pipeline to Amoco Heater Tie-in
Amoco Heater Tie-in Point (ending point of Alternative Sour Gas/Condensate and Sweet Fuel Gas Pipelines Routes)
Note: (1) Refer to Map 1–3 in the DEA for location of proposed (wells 4, 7, 8, and 10) and alternative (wells 7, 8, and 10) gas gathering systems.
T. 19 N.
T. 18 N.
T. 17 N.
T. 16 N.
T. 15 N.
Proposed Exxon Gas Plant Site/Alternative Central Heater and Separation Facility
Existing 138/230 kV Powerlines
Chevron (Carter Creek) Gas Plant Site
Alternative Access and Sulfur Haul Road
Amoco (Whitney Canyon) Gas Plant Site
Amoco (Ryckman Creek) Oil Production Plant
Existing Amoco Sulfur Haul Road
A
B
C
D
E
F
G
10.3
LINCOLN
UINTA
COUNTY
FOURTH
STANDARD
PARALLEL
NORTH
WEST
MERIDIAN
AUXILIARY
UTAH
WYOMING
Almy
Leroy
Cumberland Gap
41° 30' 00"



Revised June 1983

SCALE 1:126,720
½ INCH = 1 MILE SERIES

Map G-1. DETAILED LOCATION MAP FOR PROPOSED AND ALTERNATIVE PROJECT COMPONENTS

#50753301 ID:88074137 TD195.G3 R62 1993b

BLM Library
Denver Federal Center
Bldg. 50, OC-521
P.O. Box 25047
Denver, CO 80225

BLM Library
Denver Federal Center
Bldg. 50, OC-521
P.O. Box 25047
Denver, CO 80225

① map